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ABSTRACT

This guide provides explanations of control methods for infection and diseases in child care with an emphasis on prevention and health. The guide consists of two parts. The first part covers the following topics on preventing illness in children: how infections spread; handwashing; separation into age groups; nappy changing and toileting; cleaning toys, clothing, and the center; food safety; animals; dealing with spills of blood and other fluids; children's wading pools; immunization; watching for and recording infections in children; exclusion of sick children and staff; occupational risks for child care workers; and the role of public health workers. The second part offers information on specific diseases along with the description, incubation period, infectious period, responsibilities of child care providers and parents, control of the spread of infection, and treatment for specific diseases in the following categories: respiratory complaints, gastrointestinal complaints (diarrhea and vomiting), skin complaints (rashes and bites), and other complaints. A glossary of medical terms is included. Three large size charts regarding changing nappies, when to wash hands, and childhood vaccination schedules are also included with the guide. (Contains 25 references.) (AP)

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Staying Healthy in Child Care

Preventing infectious diseases in child care

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Department of Human Services and Health

Staying Healthy in Child Care

Preventing infectious diseases in child care

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Part 1

Preventing illness

Infections with or without illness are common in children. At home, children are reasonably well protected from infectious diseases because they don't come in contact with many people. The adults they meet are generally immune to many childhood illnesses because they have had them as children. Because of this immunity, adults cannot transmit those infections to children. When children spend time in child care or other facilities and are exposed to a large number of children for some time, infectious diseases spread.

It is not possible to prevent the spread of all infections and illnesses within centres. However, some illness from infectious disease can be prevented.

Some of the methods we recommend to control infection have been shown to reduce the spread of illness in child care centres. Others are based on infection control methods used in other settings, for example, hospitals. As an early childhood service or care provider, you need to be aware of ways to reduce the spread of disease where you work.

You can help prevent illness.

1 How infections spread

There are four steps to the spread of infections

1 The person with the infection spreads the germ into their environment.

2 The germ must survive in the environment.

3 The germ is then passed to another person.

4 The next person becomes infected.

The infection control process aims to prevent the spread of infections at every step.

The person who has the infection

This child or adult may or may not show any signs of illness. They may be infectious before they become unwell, during their illness, after they have recovered, or without any signs of illness at all. For example, in cases of diarrhoea due to giardia, children and staff who do not have diarrhoea may still have infectious giardia in their bowel motions. For this reason, the infection control process must **always** be followed by **all** people in the child care centre.

The germ

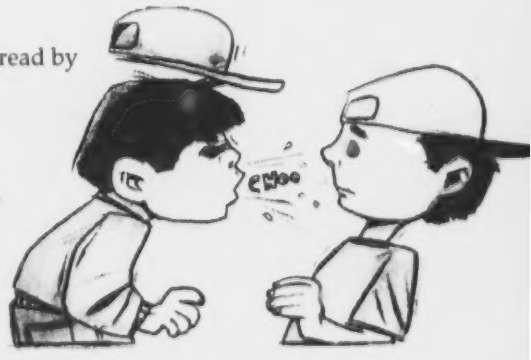
Infectious illnesses may be due to viruses, bacteria, protozoa or fungi. All of these organisms are too small to see with the naked eye. These germs can survive on hands and objects, for example, toys, door handles and bench tops. The length of time a germ may survive on a surface depends on the survival characteristics of the germ itself, the type of surface it has contaminated and how often the surface is cleaned. **Washing** with detergent and water is a very effective way of removing germs

The method of transmission

Germs can be transmitted in a number of ways, including through the air by droplets; through contact with faeces and then contact with mouths; through direct contact with skin; and through contact with other body secretions (such as urine, saliva or discharges) or with blood.

Airborne droplets/infectious discharges

Sneezing and coughing by infected children allow germs to spread by way of tiny airborne droplets. These are breathed in or, more commonly, transferred from surfaces to the mouth and nose by hands. Hands and other surfaces soiled with nasal and throat discharges are responsible for spreading many diseases. Some of the infections transmitted in this way are: the common cold, chickenpox, diphtheria, influenza, measles, meningitis (viral and bacterial), mumps, whooping cough (pertussis), rubella, respiratory syncytial virus, streptococcal disease and viral gastroenteritis.



Contact with faeces and mouths

Viruses, bacteria and parasites which are present in the faeces of ill children or well but infected children (carriers) may be passed directly from soiled hands to mouths. They may also be spread indirectly by contact with objects, surfaces or food soiled with faeces. Studies show that the sites most frequently contaminated with faeces are hands, nappy changing areas, toilet flush buttons, tap handles, toys, table tops and floors. Diarrhoea-causing germs passed in this way are campylobacter, giardia, hepatitis A (infectious hepatitis), salmonella, shigella and a variety of intestinal viruses such as rotavirus, polio vaccine virus and the virus that causes hand, foot and mouth disease.

Skin contact

Some conditions can be spread directly by skin-to-skin contact, especially of hands, or indirectly by contact with contaminated objects or surfaces. Impetigo (school sores), headlice, ringworm and scabies are spread this way.

Contact with other body secretions or blood

Hands, objects, surfaces or food soiled with urine can also contribute to the spread of infection, particularly mumps and cytomegalovirus. Some diseases, such as hepatitis B and the AIDS (HIV) virus, are transmitted by direct contact with blood or body secretions. However, this method of transmitting the hepatitis B and AIDS viruses is very unlikely in the child care setting.

The next person to become infected

When the germ has reached the next person it must find a way to enter the body. It can enter through the mouth, intestinal tract, nose, lungs, mucosa of eyes, genitals or through a sore or dermatitis on the skin. Whether a person develops illness after this germ has entered the body depends on both the germ and the person's immunity. We can prevent illness at this step by preventing entry to the body (for example, by covering wounds and taking care with objects that come in contact with mouths and eyes) and by immunisation.

2 Handwashing

Remember

Infections can be spread by a person who shows no signs of illness.

Handwashing is the most important way of controlling infection.

The best way to prevent the transmission of disease is to **wash your hands well**. Educating staff to wash their hands carefully decreases the amount of disease in infants and toddlers. Handwashing is effective because it dilutes and flushes off germs and contaminated matter. Use this method to make sure **your** hands and **the children's** hands are free of germs.

How to wash hands

- Use **soap** and warm **running water**.
- Rub your hands vigorously as you wash them, **counting to ten**.
- Wash your hands **all over**, including:

  backs of hands

  wrists

  between fingers

  under fingernails.
- Rinse your hands well, counting to ten.
- Turn off the tap with a single-use towel. Discard the towel.
- Press dry your hands with a new single-use disposable paper towel or an individual cloth towel.

Train the children under your care to wash their hands in this way. You will need to supervise and observe them so that they develop handwashing as a good habit.

Soap, towels and lotion

Using ordinary soap is better than using germicidal solutions. The type of soap does not matter provided it is well tolerated by the staff and children. Liquid soap is preferable to cakes of soap as organisms may grow in wet soap left on hand basins.

The best way to reduce the transmission of germs is to use either disposable towels or electric hand dryers. If cloth towels are preferred, these should be used once only and then immediately placed in a laundry basket, or else each person should have their own towel. Individual cloth towels must be hung where they do not touch another towel. They must be laundered daily. Towels used to turn off taps should be discarded immediately. You may use electric hand dryers as long as they are not too hot for children and the hands are well dried.

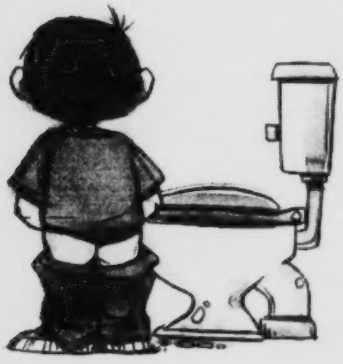
Try to prevent cracked skin developing, as any breaks in the skin allow germs to enter the body. Make sure that skin lotion is readily available and use it often. Use gloves to protect the hands when cleaning or doing laundry.

When to wash your own hands

- When you arrive at the centre. This reduces the introduction of germs.
- Before handling food.
- Before eating.
- After changing a nappy.
- After going to the toilet.
- After cleaning up faeces or vomit.
- After wiping a nose, either a child's or your own.
- Before going home. This prevents taking germs home.

When to wash the children's hands

- When they arrive at the centre. This reduces the introduction of germs.
- Before eating.
- After having their nappy changed. Their hands will become contaminated with germs while they are on the change mat. This is also a learning experience.
- After going to the toilet.
- After playing outside.
- After touching nose secretions.
- Before going home. This prevents taking germs home.



What to do when there is no convenient tap

When taps and sinks for handwashing are not available, use alcohol-based wipes or lotions to wipe the children's and your own hands. This is not as good as handwashing.

Remember

Children learn by watching you. They copy what they see adults doing. When children are not washing their hands or are not washing them correctly:

- Ask them to wash their hands.
- Show them how to wash their hands if they do not know how or have forgotten.
- Remind them that washing their hands will stop the spread of germs that cause sickness.
- Review your handwashing procedure.

3 Should children be separated into age groups?

Studies of germs on surfaces in child care centres tell us that the spread of disease is more likely when children who are not toilet trained mix with children who are toilet trained. Also, at certain ages, children are particularly susceptible to some diseases. These children may then spread disease to other age groups.

For these reasons some researchers recommend that children of different age groups be separated in the child care centre. They say that child care centres that do not separate children should set up different interest and activity areas for infants, toddlers and pre-school aged children. The children are then less likely to mix with each other during the day.

However, these recommendations are not practical in most child care centres. Child care workers and experts say that separating children is impractical, expensive and difficult to incorporate into the running of the centre. They also say that separating children into age groups isolates them and makes the environment more clinical than home-like.

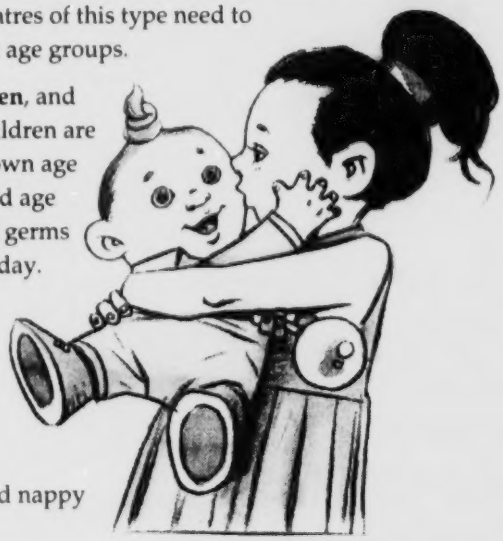
There are two child care settings in which children are most likely to mix with other age groups.

1 The first is the centre with a **family group** approach to child care. In this type of centre, children of all age groups are together for most of the day. Staff in centres of this type need to understand how infections can spread among different age groups.

2 The second is the centre with **lower numbers of children**, and fewer staff, at the **beginning or end of the day**. The children are in mixed age groups at these times, but are with their own age group for the rest of the day. Children who are in mixed age groups for only part of the day are less likely to spread germs than those who are in mixed age groups for the whole day. This is because their contact time with other age groups is short. Staff in centres of this type can:

   ensure that **all** children (including babies) **wash their hands** before joining the mixed age group, and

   take children back to their **own** area for toileting and nappy changing.



4 Nappy changing and toileting

Hygienic nappy changing

Remember

Have an area specifically set aside for changing nappies.

Check to make sure that the supplies you need are ready, including: roll of paper or disposable towels; pre-moistened towelettes or damp paper towels (use water to wet them); disposable gloves; plastic bags; fresh nappies; clothes; rubbish bin lined with plastic.

Get a walking child to walk to the change area. Have steps available so that the child can reach the change mat.

Use only your hands to carry a crawling child. Hold the child away from your body when you pick the child up.

Use the following method to stop disease spreading through contact with faeces.

- Place paper on the part of the change table where the child's bottom will be.
- Put the child's bottom on the paper.
- Wear gloves for a dirty nappy.
- Remove the child's nappy and any soiled clothes. Put them in a plastic bag.
- Clean the child's bottom with a pre-moistened disposable towelette or a damp paper towel. Put the used towelette or paper towel in the bin.
- Remove the paper from beneath the child. Put it in the bin.
- Remove gloves by peeling them back from your wrists. Do not let your skin touch the outer contaminated surface of the glove. Put the gloves in the bin.
- Dress the child. Now you can hold the child close to you.
- Wash the child's hands, even if they are not visibly soiled with faeces.
- Take the child away from the change table.
- Clean the change table.

Cleaning the nappy change table

Use this method to keep the nappy change table clean. For more information about what disinfectants to use, see page 10.

- After each change, **wash** the table well with either

  warm water and soap, or

  quaternary ammonium compounds.

- **Disinfect** the surface at the end of a nappy changing session or at the end of the day. Wipe the area with diluted bleach and leave for 10 minutes (or overnight if done at the end of the day).
- **Wipe** the mat dry.
- **Wash your hands**.

Mattresses and covers used on the nappy change table need to be smooth because germs can survive in cracks, holes, creases, pleats, folds or seams.

Nappy covers

Nappy covers (usually plastic pants) help to prevent faeces—and therefore germs—from leaking. Studies show that wearing clothing over plastic pants reduces the number of germs from the bowel found on surfaces in the centre. It is a good idea for the nappy and nappy cover to be covered with clothing.

Overseas guidelines suggest that nappy covers should be of the wrap-around type, and not of the pull-up pants type. In addition, these guidelines state that the nappy and nappy cover should be removed together and discarded for washing every time a nappy is changed.

These suggestions make sense when you consider that the nappy cover will be contaminated with germs from the child's bottom. When pulling the cover down over the child's legs, you may contaminate the child's legs and feet with germs from the pants. If the child is then placed back into the centre, these germs may contaminate other surfaces and children.

Using only wrap-around covers and discarding the nappy cover every time the nappy is changed would be major changes for Australian child care centres. These practices are worthy of consideration, however, and may one day be standard in Australian child care centres.

One study showed that using disposable nappies reduced the number of germs from faeces found on surfaces in the child care centre. It may be worth using disposables if the centre has an outbreak of diarrhoea.

Toilet-training

- Ask parents to supply a clean change of clothing.
- Place soiled clothes in a plastic bag for parents to take home at the end of the day. (Explain to parents that washing soiled clothes at the centre can spread germs.)
- Help the child use the toilet.
- Help the child **wash their hands**. Ask older children if they washed their hands counting to ten. Explain to the child that washing their hands will stop germs that might make them sick.
- If the centre uses a potty chair, empty the contents into the toilet and wash the chair. Do not wash it in a sink used for washing hands.
- **Wash your own hands.**

5 Cleaning toys, clothing and the centre

Write down the centre's cleaning program. Attach it to a wall chart for the staff to sign when cleaning has been performed.

Suggested cleaning program

Clean these daily with detergent and warm water

- **Bathrooms.** Wash tap handles, toilet seats, toilet handles and door knobs. Check the bathroom during the day and clean it if necessary.
- **Toys** and objects put in the mouth.
- **Surfaces** the children have frequent contact with, for example, bench tops, taps, cots and tables.
- **Mattress covers and linen**, if each child does not use the same mattress cover every day.
- **Floors**.

Clean these weekly with detergent and water

- Low shelves.
- Door knobs.
- Other surfaces often touched by children.

Clean these with disinfectant

- Nappy change tables.
- Spills of blood, faeces, vomit and mucus.
- Other areas and toys when there is an outbreak of an easily transmitted disease (for example, gastroenteritis or hand, foot and mouth disease).

Types of disinfectants

There is no perfect disinfectant. Quaternary ammonium compounds are preferred for daily use in child care settings. In some circumstances, diluted household bleach may be the desired disinfectant. **The use of disinfectants should never replace good cleaning.**

Quaternary ammonium compounds (quats)

Quaternary ammonium is found in many common disinfectants. Check the label to identify it. Quaternary ammonium compounds (quats) are active against many bacteria and are very useful as an all-purpose housekeeping disinfectant. They are of little value in killing viruses or fungi. If there is a problem in the centre with viral illness (such as some diarrhoea and conjunctivitis) or fungal illness (such as thrush) try a different method of disinfection, for example, sunlight or diluted bleach. Soap and detergent should not be used together with quats as they neutralise each other. In any case, quats have their own in-built detergent action.

Sodium hypochlorite (bleach)

Household bleach usually contains 5% sodium hypochlorite. Bleach kills bacteria, fungi and viruses. However, bleach is quickly inactivated by protein. For this reason, **wash** surfaces thoroughly **before** applying diluted bleach. Do not use bleach on metal (for example, metal cots) because it is corrosive. Bleach should be **diluted** for use in the centre. Make a fresh dilution of bleach **every day**. Dilute bleach by using 1 part bleach to 9 parts water—for example, 1 cup of bleach to 9 cups of water.

Alcohol

Alcohol of 70% strength or more has the ability to kill some bacteria and viruses. Do not wipe alcohol off the surface being disinfected. Just allow it to evaporate.

Dettol, Medol and other phenolic agents

Phenolic agents such as Dettol and Medol can kill most bacteria. However, they do not kill viruses.

Notes on disinfectants

- No disinfectant can be depended upon to kill all germs. If a disinfectant kills 99.99% of germs—that is, if only 100 in every one million germs survives—then the disinfectant is usually accepted as being effective.
- A disinfectant fluid must touch a germ cell and be absorbed by it in order to kill it. When you apply disinfectants to a dirty surface, many germs inside the dirt will remain untouched and so will survive. That is why it is important to clean surfaces before you disinfect them. This will remove most of the germs, and those that remain will be killed by the disinfectant.
- It is very important to dilute disinfectants correctly before use. Follow the manufacturer's instructions carefully. Disinfectants gradually deteriorate after dilution. Always use freshly diluted disinfectants.
- There is no such thing as instant disinfection. All disinfectants take time to work. Some bacteria die more slowly than others under the same conditions. Most disinfectants stop working when they dry. The longer an object is immersed in a disinfectant solution, the more germs will be killed. It is not enough simply to wipe objects or surfaces with disinfectant. This is less effective than cleaning them thoroughly without using disinfectant.

Remember

Wear gloves when handling chemical disinfectants. Disinfectants are a very common cause of dermatitis.

Clean items before using bleach.

Do not use disinfectants if thorough cleaning is sufficient.

Dry mops and cleaning cloths well after use. Sunlight is excellent.

Cleaning techniques

Cleaning is an important part of infection control in the centre. Cleaning is itself a form of disinfection because it removes all surface dirt. Thorough cleaning reduces contamination to such a degree that healthy children are not at risk of contracting disease. We recommend using detergent and water for cleaning. Use colour-coded sponges in each area (for example, blue in the bathroom, yellow in the kitchen, green for toys etc.) and keep them separate. This way, the bathroom sponge will not be used on a toy or the kitchen bench.

Nappy change area

Clean the nappy change area thoroughly after each nappy change with warm water and soap. Apply a disinfectant (diluted bleach) at the end of the day, and leave this to dry overnight. Quaternary ammonium disinfectant may also be used in the nappy change area.

Clothing

Staff clothing, or over-clothing, should be washed daily in hot water. It is a good idea for staff to wear overclothes, such as aprons, gowns or coats with button-up fronts. These can be removed and washed at the end of the day. This helps to protect the child care worker's own family when she/he returns home. Overclothes must be worn over clothing that cannot be washed every day, for example, jumpers.

The children's dress-up clothes should also be washed regularly. We recommend washing them once a week in hot water and detergent.

Linen

Wash linen in **hot** water. Do not carry used linen against your own clothing or coverall. Instead, take it to the laundry in a basket with wheels. Treat soiled linen as you would a soiled nappy. If washed at the centre, soiled linen should be:

soaked in disinfectant (diluted bleach)

washed separately in hot water

dried in the sun or in a hot clothes drier.

Sandpits

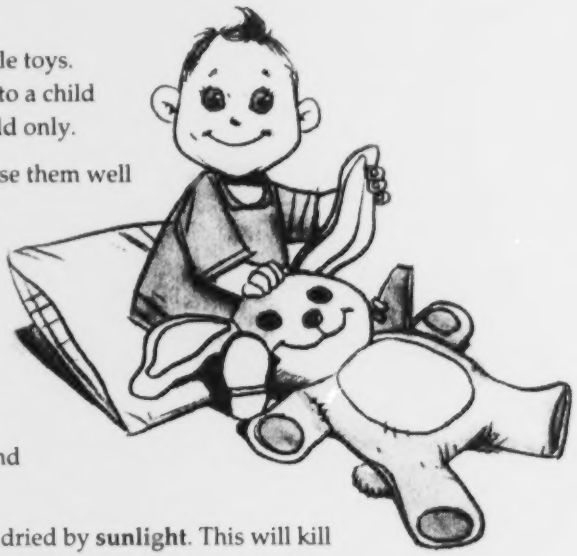
Sandpits can be a source of infection. They need to be well maintained and kept clean.

Sand can become contaminated with faeces and urine, usually from cats and sometimes from the children. Therefore, sandpits need to be constructed properly and have good drainage. The sand should be raked often. When not in use, keep the sandpit securely covered.

Sand that is contaminated by human faeces, blood or other body fluids should be replaced or disinfected. First, remove the

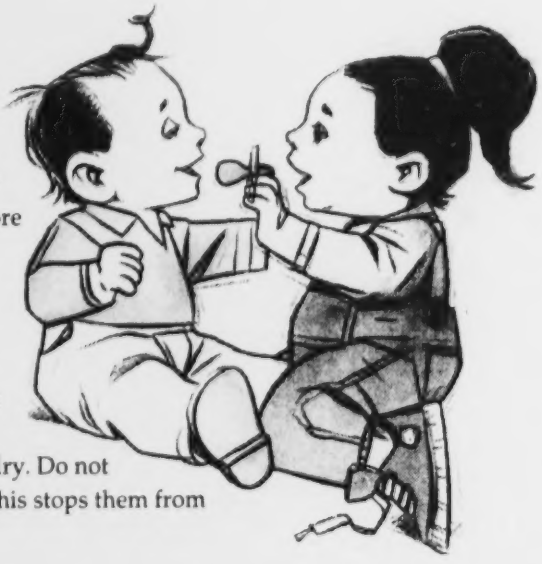
contaminated sand. Then disinfect the sandpit with bleach if necessary. To disinfect 8 cubic metres of sand, you will need 400 grams of bleaching powder diluted in 20 litres of water. Sprinkle the diluted bleach on the sand with a watering can and then rake the area.

Toys



- Buy only **washable toys**. Get rid of non-washable toys. Individual non-washable toys may be assigned to a child and kept in the child's cot for the use of that child only.
- Wash toys daily in **hot water and detergent**, rinse them well and dry them. Some toys can be cleaned in the dishwasher.
- Chemicals used in disinfectants may affect the colour and surface of toys. Usually, **it is not necessary to use disinfectant** when cleaning toys. However, toys that have been in young children's mouths should be disinfected. Toys need to go back into circulation looking clean and feeling dry.
- All toys, including cloth toys and books, can be dried by **sunlight**. This will kill some of the germs not removed by washing.
- It is useful to separate toys into baskets. The toys in each basket can then be **rotated** between washing one day and in use the next.
- Books should be **inspected** for visible dirt and soiling. Books can be cleaned by wiping them with a moist cloth with detergent on it, and then drying them. Leave damp or wet books out of circulation until dry.

Dummies



Dummies must never be shared by children. When not in use, dummies should be stored in individual plastic containers. Each container should have the child's name on it. Do not store dummies where they may come in contact with another dummy or toy. Store dummies out of children's reach.

Toothbrushes

Toothbrushes should be labelled with the child's name. Store them out of the reach of children. Do not let them drip on one another (passing germs). The bristles should be exposed to the air and allowed to dry. Do not store toothbrushes in individual containers because this stops them from drying. Bacteria grow on wet toothbrushes.

Cots

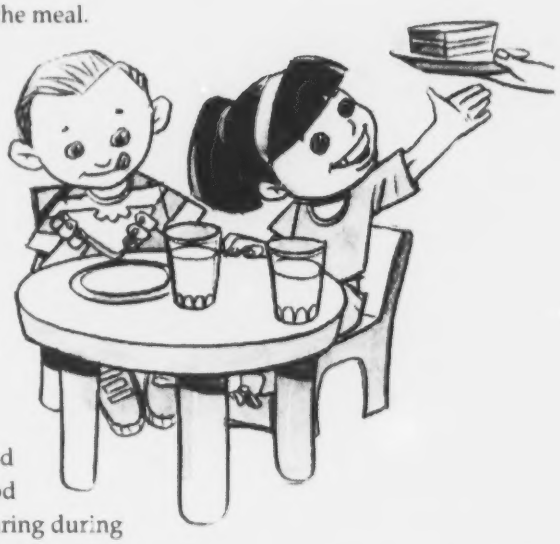
If a child soils a crib or cot:

- Put on gloves.
- Clean the child.
- **Wash the child's hands.**
- Clean the cot.
- Remove bulk of soiling/spill with absorbent paper towels.
- Remove any visible soiling by cleaning with detergent and water.
- Disinfect the area.
- Provide clean linen.
- Place soiled linen in a lined, sealable laundry bin.
- Remove gloves.
- **Wash your hands.**

6 Food safety

Getting ready for meals and snacks

- Before meals, **clean tables** that are to be used for the meal.
- **Wash your hands** before preparing or serving food. If you are interrupted to care for another child while preparing food or spoon-feeding an infant, be sure to **wash your hands again** before you continue.
- Check that all the **children's hands are washed** before they eat or drink. This is particularly important before fruit sessions. Teach children to turn away from food when they cough or sneeze, and then to wash their hands.
- Make sure children **do not share** food, plates or utensils. Do not allow children to choose their food from a common bowl because they may touch food that other children will eat. Remind them that sharing during meals can spread germs that might make them or other children sick.



- Use a **separate spoon** for each baby you feed.

Preparing food

Food is an excellent place for bacteria to grow. Germs that do not grow in food can still be passed from one person to another in food. Bacteria that are common on our skin and in the environment can cause food poisoning if allowed to grow in large numbers in food.

Child care centres where staff members change nappies and prepare or serve food on a daily basis have over three times as much diarrhoea as centres that keep these functions separate. For this reason, the person who prepares and serves food should not be the person who changes nappies or helps children go to the toilet on that day.

The child care centre should have a hand basin, soap and disposable towels in the kitchen so that staff who are preparing food can easily wash their hands. Staff should wear clean overalls when working in the kitchen. The kitchen should, of course, be fly and vermin proof.

If you are involved in handling, preparing or serving food, remember these basic points.

- **Wash your hands** before handling raw food.
- To prevent cross-contamination between raw and cooked foods:

  keep raw and cooked foods separate, and

  use separate utensils for raw and cooked food.
- Keep food **hot** (over 60 degrees Celsius) or keep food cold (under 4 degrees Celsius). Otherwise **don't keep it at all**. Keep a thermometer in your fridge so that you can check that the temperature is below 4 degrees Celsius.

- Heat meals that have come from home thoroughly (above 60 degrees Celsius) and then let them cool down.
- Throw out left-overs. Tell parents what their child left, but do not return the left-over food.
- Heat food **once** only.
- Heat milk for bottles once only.
- Check that food has cooled before giving it to the child. Remove a small piece of food with a spoon to another plate and test the temperature of the food with your hand. Throw this piece of food away and wash the spoon.

Breastmilk

Breastmilk is best for babies. It has immunological properties that help prevent illness in babies. Mothers of babies up to 12 months should be encouraged to provide expressed breastmilk or to visit the centre to feed their babies. Support and encourage mothers who wish to supply breastmilk for their babies. Encouraging words from a child care worker go a long way to helping a mother who is trying to work and express breastmilk.

Breastmilk can be stored in the refrigerator for 48 hours or in a deep freezer for up to three months. Frozen breastmilk must be thawed quickly—but don't put it in boiling water or it will curdle. Place the container under cold running water. Gradually allow the water to get warmer until the milk becomes liquid. Test the temperature by dropping a little milk onto your wrist.

Throw away any milk that is left over. Do not re-freeze or re-heat left-over milk. Ask mothers to supply breastmilk in multiple small quantities to prevent wastage.

Formula

When preparing formula, follow the manufacturer's instructions carefully. Throw away any formula that is left over. Do not freeze or re-heat left-over formula.

Microwave ovens

Do not warm bottles in the microwave. Microwave ovens distribute heat unevenly. Also, water in the milk turns to steam and collects at the top of the bottle. There is a danger that the baby could be scalded.

Children's cooking classes

Children love to cook. Cooking is a safe and enjoyable activity for children in child care centres provided that a few simple precautions are taken.

- Always be aware of the dangers of heat.
- Discourage a child who has recently been ill from joining the cooking class.
- Tie up any long hair.
- Make sure children **wash their hands** before starting.
- Limit the type of food that children prepare to food that will be cooked afterwards. Germs in the food will be destroyed when the food is cooked.

  Foods suitable for cooking classes include: cooked biscuits, fresh pasta, soups and pizza.

  Foods not suitable for cooking classes include: fruit salad, refrigerator biscuits and jellies.

7 Animals

Animals can be a source of great joy for children. Some simple preventive measures will avoid any risk to health from contact with animals.

- Ensure that animals are de-fleaed and de-wormed regularly. This is particularly important in rural areas where hydatid tapeworm infection is a possibility.
- Animals that are ill should be treated promptly by a veterinarian. An animal that is irritable because of pain or illness is more likely to bite or scratch.
- Supervise children when they have contact with animals. Children should be discouraged from playing with animals while animals are eating. Don't let children put their faces close to animals.
- Emphasise personal cleanliness. In particular, make sure that children **wash their hands** after touching animals.
- Stop children from eating dirt.
- Stop animals from contaminating sandpits, soil, pot plants and vegetable gardens. Dispose of animal faeces and litter daily, using gloves. Place litter in a plastic bag and put it out with the garbage.
- Faeces, apart from those in litter trays, can be flushed down the toilet.
- Pregnant women in particular should avoid contact with cat faeces.
- Clean out bird cages regularly, using gloves. Wet the floor of the cage before cleaning it to avoid inhalation of powdered, dry bird faeces.

8 Dealing with spills of blood and other body fluids

There is a risk of infection from blood and body fluids. At the centre, you should treat all blood and body fluids as if they could possibly be infectious.

When a child is injured at child care, there are several things you will need to do. These include: **looking after** the injured child, **sending** for the first aid officer, **checking** that no-one has come in contact with the injured child's blood or body fluids, and **cleaning** up the spill.

Remember

Avoid direct contact with blood or body fluids.

Wear gloves if possible.

Cover any cuts and abrasions on your hands with a bandaid. Your skin is an effective barrier against you becoming infected from spilled blood.

The child

- When attending an injured child who is bleeding, take care to avoid contact with the blood.
- Comfort the child and move them to safety.
- Apply pressure to the bleeding area. Use gloves if available. (If gloves are not available, take the first opportunity to get someone wearing gloves to take over from you. Then **wash your hands**.)
- Elevate the bleeding area, unless you suspect a broken bone or fracture.
- Send for the first aid officer.
- When the wound is covered and no longer bleeding, remove gloves. Put them in a plastic bag and place the bag in the rubbish bin.
- **Wash your hands** with soap and water.

The first aid officer

- Wear gloves if there is time.
- Dress the child's wound with a bandage or suitable substitute and seek medical assistance.
- Remove gloves. Put them in a plastic bag and place the bag in the rubbish bin.
- **Wash hands thoroughly** with soap and warm water.

Contact with blood or body fluids

Because of the risk of infection, it is important for everyone to avoid contact with an injured child's blood and body fluids. But if these do spill onto another adult or child, take the following precautions.

- Wash the area of contact thoroughly with soap and warm water.
- If contact has been with an open wound, broken skin, mucous membrane (mouths, eyes, genitals) or a penetrating injury:

  Irrigate the area with water in the case of contact with a mucous membrane.

  Wash the area thoroughly with soap and water in the case of open wounds and broken skin.

  Report and investigate the contact according to the centre's policy. Your local public health workers will be able to give you advice.

Cleaning the centre after a spill

- Wear gloves.
- Place a paper towel over the spill. Carefully mop up the spill. Place the paper towel in a plastic bag, seal the bag and put it in the rubbish bin.
- Clean the surface with warm water and detergent.
- Disinfect the area with freshly diluted **bleach**. If possible, leave for half an hour before wiping dry. Wear gloves when wiping the area dry.
- Remove gloves. Put them in a plastic bag and place the bag in the rubbish bin.
- **Wash hands thoroughly** with soap and warm water.

Remember

Blood or body fluids may contain viruses such as hepatitis B or the HIV (AIDS) viruses. Therefore, it is important to disinfect the area where a spill has occurred, using bleach. Use 1 part bleach to 9 parts water (for example, 1 cup of bleach to 9 cups of water). Dilute bleach on the day of use.

9 Children's wading pools

(This section draws on information provided in the Northern Territory Department of Health and Community Services publication, Guidelines for the Safe Operation and Maintenance of Children's Wading Pools.*)*

Children's wading pools require the same attention to cleanliness and disinfection as swimming pools. Wading pools that are not adequately chlorinated and maintained provide a serious risk of disease transmission. Follow the procedures set out below at all times.

You do not have to chlorinate water for some water play activities—for example, playing with sprinklers, buckets and water tables.

Cleaning the pool before use

Every day, clean out any leaves or debris in the pool and hose away all surface dirt. Scrub the inside of the pool with disinfectant using a stiff broom kept especially for the purpose. Rinse away the disinfectant before filling the pool. (Disinfectant left in the pool may interact with the chlorine.)

Filling the pool

Fill the pool from the domestic water supply. Add chlorination chemicals while the pool is filling. Maintain a chlorine level of 4 milligrams per litre (4 mg/L) while the pool is in use.

Chlorination chemicals are available in a number of formulations. Some are in liquid form and others in powder form. The most common chlorination chemicals are:

sodium hypochlorite (liquid bleach)

bleaching powder (powder)

calcium hypochlorite (powder).

These chemicals each contain different amounts of chlorine. Sodium hypochlorite contains 12% available chlorine, bleaching powder contains 20% available chlorine, and calcium hypochlorite contains 65% available chlorine.

Although this may seem complicated, you will only need to work out **once** how much chlorination chemical you need for your centre's wading pool. First, though, you will need to know the pool volume—that is, how many litres of water the pool holds. Once you know this, use the table on page 21 and the formula below it to estimate the amount of chlorination chemical needed to chlorinate the pool.

Mix the chlorination chemical thoroughly with water in a clean container and add it to the partly filled wading pool. If the pool is already full, stir the chlorination chemical thoroughly into the pool water **before** children enter the pool.

Testing the water

Check the chlorine level of the pool regularly with a test kit. These are available from any swimming pool shop. Check the chlorine level:

hourly if the pool is in continuous use, or

before each new group of students enters the pool.

The exact amount of chlorination chemical needed to chlorinate the pool may vary depending on shade, the weather and seasonal conditions. Temperature and sun both affect the rate of breakdown of chlorine in the water. Testing the water regularly will ensure that safe levels of chlorine are maintained in the centre's wading pool.

Keep simple records of chlorine levels, the amount of chemicals added, the type of chemicals used and the numbers of children using the pool. Records are useful in maintaining safe water quality and preventing the overuse of chemicals.

How much chlorine should I add to the pool?

The following table provides a guide to estimating the amount of chlorination chemical required for a range of pool volumes. For example, if your pool contains 6,000 litres of water, you would need 200 ml of sodium hypochlorite or 120 gm of bleaching powder or 37 gm of calcium hypochlorite.

Guide to amount of chemicals to use in wading pools

Pool volume	Sodium hypochlorite (Liquid, containing 12% available chlorine	Bleaching powder (Powder, containing 20% available chlorine)	Calcium hypochlorite (Powder, containing 65% available chlorine)
4,000 litres	133 ml*	80 gm*	25 gm
4,500 litres	150 ml	90 gm	28 gm
5,000 litres	167 ml	100 gm	31 gm
5,500 litres	183 ml	110 gm	34 gm
6,000 litres	200 ml	120 gm	37 gm
6,500 litres	217 ml	130 gm	40 gm
7,000 litres	233 ml	140 gm	43 gm

ml = millilitre (1,000 millilitres = 1 litre)

gm = gram (1,000 grams = 1 kilogram)

Formula for calculating amount of chlorination chemicals

The pool's chlorine level should be maintained at 4 milligrams per litre (0.004%). Use the following formula to work out the amount of chemical to use in the wading pool.

Required chlorine level (0.004%) ÷ Available chlorine x Pool volume = Amount of chemicals (in litres or kilograms)

For example, suppose that the centre's wading pool holds 5,500 litres of water and you are using calcium hypochlorite (which has an available chlorine level of 65%) to chlorinate the pool. Using the above formula, divide the required chlorine level (0.004) by available chlorine (65%). Multiply the answer by the pool volume (5,500) and you get 0.34 kilograms, which is the same as 34 grams.

Children and the wading pool

- Children with diarrhoea, upset stomachs, open sores or nasal infections should not be allowed to use the pool.
- All children should go to the toilet before entering the pool. Make sure that children are especially careful about healthy toilet cleanliness practices.
- All children should wear clean bathers or a change of underwear in the pool.
- If a child passes a bowel motion while in the pool, remove all children from the pool immediately. Empty the pool, clean it thoroughly and disinfect it.

Re-using the pool

When the pools is filled in the morning and re-used in the afternoon, test the chlorine level before the afternoon use. If the chlorine level is low, dilute additional chemical, add it to the water and mix it in thoroughly before allowing children to enter the pool. If the water in the wading pool looks dirty, empty the pool, re-fill it with fresh water and re-chlorinate the pool.

After using the pool

Empty the pool at the end of the session or day. Secure all valves and hoses against improper use. Wading pools should be kept empty when not in use.

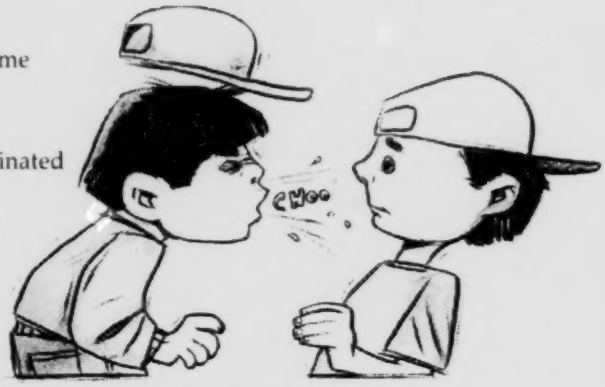
Storing materials and equipment

Chlorination chemicals are potentially dangerous. They should be kept locked up and always used according to the instructions on the label. **We recommend using eye protection and gloves when handling these chemicals.** Store cleaning materials and pool equipment where they cannot be misused. Hoses used to fill the pool should be stored empty in a shaded area to avoid excessive build-up of micro-organisms.

Contact your local environmental health officer for further information and advice.

10 Immunisation

Childhood vaccinations



The cheapest and most reliable method of preventing some infections is immunisation. Immunisation protects the person who has been immunised, children who are too young to be vaccinated, and people who have been vaccinated but did not respond to the vaccine. The principle of immunisation is simple: it gives the body a memory of infection without the risk of natural infection.

Ask parents if their child has been vaccinated. If the child is **not** vaccinated, tell the parents that their child will be **excluded from care** during outbreaks of some infectious diseases (such as measles and whooping cough), even if their child is well.

If the child is vaccinated, make sure that the child has received all the vaccinations recommended for their age group. A list of vaccinations recommended by the National Health and Medical Research Council (NHMRC) for children up to the age of 15 is given on page 27.

Ways that you can encourage parents to vaccinate their children include:

- put up wall charts in rooms for under 2 year olds
- send home first birthday MMR (measles–mumps–rubella) reminder cards
- review each month which children are behind in their vaccinations, update the child's records kept in the centre and send home a reminder card
- put a computerised message at the bottom of receipts
- when enrolling children, make a note in the director's diary of when updates will be needed.

Most of the vaccinations shown in the NHMRC table are made up of several vaccines.

- **Triple antigen** (known as **DTP**) contains vaccines against three diseases: diphtheria, tetanus and whooping cough (pertussis).
- **CDT** contains the vaccines against diphtheria and tetanus. It is used instead of DTP if the child has had a serious reaction to a previous dose of DTP.
- **Sabin polio vaccine**, the vaccine to prevent poliomyelitis (polio), is in the form of a liquid that is given by mouth.
- **Measles–mumps–rubella (MMR)** vaccine is given as soon as possible after the child's first birthday. However, it may be given earlier if there is an outbreak of any of these diseases.
- **Haemophilus influenzae type b (Hib)** vaccine is now included in the schedule. Haemophilus influenzae b is a cause of meningitis.

Directors should note the vaccination status of each child in the child's record. This should be updated every six months. An increasing number of child care centres are using personal computers to hold children's records and to organise accounts. It should be possible to modify the software so that the computer will automatically generate a reminder when a child's vaccination is due.

Report outbreaks of diseases that are preventable by immunisation (such as measles) to the local health authority. For more information about the role of public health authorities, see page 39.

Adult vaccinations

Remember

Vaccination programs are not just for children. Everyone needs protection against common infectious diseases. Many infectious diseases affect both adults and children. Some, like mumps, can even hit adults harder, leading to serious illness.

The director should ensure that child care workers have had all childhood vaccinations—three doses against diphtheria, tetanus and pertussis (DTP) and three doses against polio. All adults should receive a booster dose of tetanus and diphtheria vaccine (ADT) every 10 years.

Ask workers who were not vaccinated as children to complete the primary courses of the required vaccines. The recommended schedule for adults is as follows:

On first visit	Measles–mumps–rubella (MMR)
	Oral polio (Sabin)
	Diphtheria tetanus (ADT)
2 months later	ADT and Sabin
2 months later	ADT and Sabin

In addition to these vaccinations, we recommend that child care workers who care for children under 2 years of age receive the hepatitis A vaccine. For more information about this disease, see page 95.

Diseases prevented by immunisation

Rubella (german measles)

Rubella—also known as german measles—is a mild infectious disease. It is rarely dangerous to children. However, it can be serious for adults and unborn babies. Symptoms include mild fever, headache, weakness, swollen glands, rashes and arthritis. In serious cases encephalitis (inflammation of the brain) can develop.

Pregnant women infected with rubella can pass it on to their unborn child. If this happens in early pregnancy, the child is at risk of being born deaf, blind or with heart and brain damage.

All children should be vaccinated against rubella after their first birthday. Women aged between 11 and 45 should be vaccinated against rubella, although never **during pregnancy**. Women should avoid becoming pregnant for two months after immunisation.

Tetanus

Tetanus is a serious disease. It can be caused by something as simple as a prick from a rose thorn. Tetanus bacteria are found in soil, dust, animal faeces and water. The disease attacks the nervous system, causing severe muscular spasms felt first in the neck and jaw muscles. This can spread, causing severe breathing difficulties and death in one in every 15 people infected. Both children and adults can get tetanus.

Vaccination against tetanus once every 10 years will ensure that you are always protected.

Poliomyelitis

Polio can attack both adults and children, with dangerous consequences. Polio can cause permanent crippling. Also, particularly in adults, it can paralyse the breathing and swallowing muscles, leading to death. Polio is infectious, and it can be passed between family members. Adults and children should receive three doses of oral polio vaccine, taken at two-month intervals. Polio is still a problem in many countries that Australians visit.

Measles

Measles is probably the most easily transmitted of all the common infectious diseases. It is not simply a childhood illness—it can also severely affect adults. Measles can lead to pneumonia, middle ear infection and encephalitis (inflammation of the brain).

The measles virus spreads quickly from person to person. All children should be vaccinated against measles after their first birthday. Most adults have either had the disease or been immunised.

Unimmunised children who have come in contact with measles should receive the measles vaccine (MMR) immediately. The vaccine can protect even unimmunised children, **if the vaccine is given within 72 hours** of contact with measles. This includes children under 1 year of age. Children under 12 months who receive the MMR vaccine will need a booster vaccine at 15 months of age.

If you have any cases of measles, contact your local public health officer immediately. Unimmunised children can be helped.

Mumps

Although we think of mumps as a childhood disease, it can affect adults too. Starting as a fever, together with swelling and tenderness of glands, it can spread to the central nervous system and cause deafness (which could be permanent) and inflammation of the testes and brain.

Mumps is highly infectious. All children should be vaccinated against mumps after their first birthday. Adults who have not been vaccinated and have not had mumps should be vaccinated.

Diphtheria

Diphtheria is a serious disease affecting the nose, tonsils and throat passages. It can lead to difficulty in swallowing, breathlessness, suffocation and permanent heart damage. Up to 10% of people who get diphtheria die from it.

Children should be vaccinated against diphtheria at 2 months, 4 months, 6 months, 18 months and 5 years of age. Adults should be vaccinated against diphtheria every 10 years.

Whooping cough (pertussis)

Whooping cough is serious in young babies. It affects the air passages and can cause difficulty in breathing. Between coughing spasms, the child gasps for breath. This causes the whoop-like sound that is characteristic of whooping cough. The coughing spasm is often followed by vomiting. Complications of whooping cough include pneumonia and brain damage.

All children should be vaccinated against whooping cough at 2 months, 4 months, 6 months, 18 months of age and at school entry (4–5 years of age).

In adults, whooping cough is a mild but contagious disease. The most common symptom is a dry cough that may last some weeks. Infected child care workers may bring whooping cough into the centre and infect children or other staff members.

Haemophilus influenzae type b (Hib)

Although uncommon, this infection is the most frequent cause of life-threatening infection in children under 5 years of age. It can cause meningitis (infection of the brain linings), epiglottitis (swelling of part of the throat, which obstructs breathing), pneumonia, infection of the joints or cellulitis (infection of the tissue under the skin). Symptoms of meningitis include fever, vomiting, headache, irritability, fitting and neck stiffness.

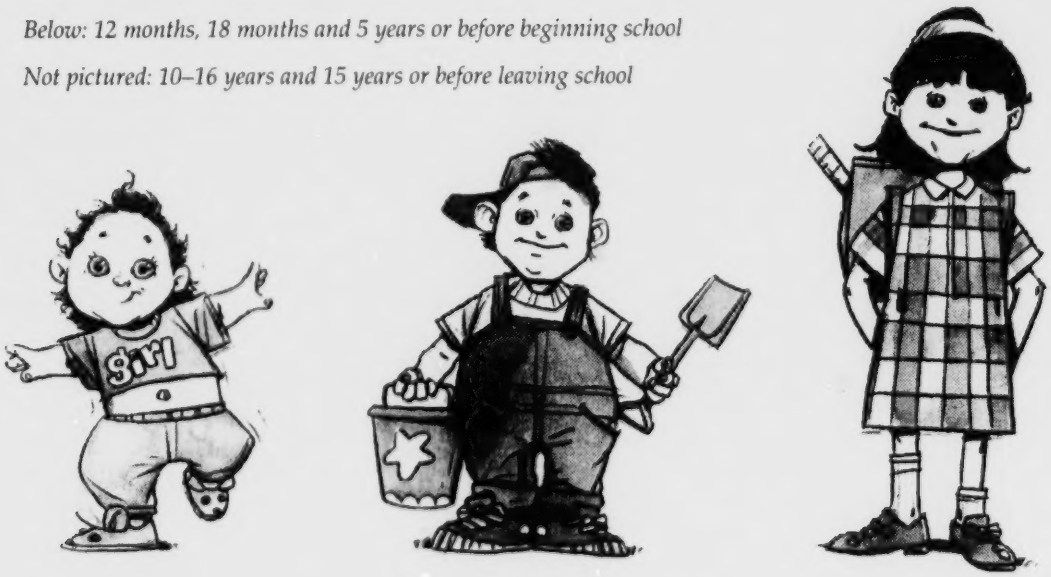
All children under 5 years of age should be vaccinated against Hib. When the vaccination is given depends upon the age of the child. Babies should be vaccinated at 2 months, 4 months and 6 months of age. A booster dose is given at either 12 or 18 months, depending on the vaccine used.

Recommended ages for childhood vaccinations

Above: 2 months, 4 months and 6 months

Below: 12 months, 18 months and 5 years or before beginning school

Not pictured: 10–16 years and 15 years or before leaving school



NHMRC Standard Childhood Vaccination Schedule

Age	Disease	Vaccine
2 months	Diphtheria, tetanus and pertussis Poliomyelitis *Haemophilus influenzae* type b (Hib) (Schedule 1 or 2)**	DTP – 'Triple antigen' OPV – Sabin vaccine Hib vaccine (a or b or c)*
4 months	Diphtheria, tetanus and pertussis Poliomyelitis Hib (Schedule 1 or 2)**	DTP – 'Triple antigen' OPV – Sabin vaccine Hib vaccine (a or b or c)*
6 months	Diphtheria, tetanus and pertussis Poliomyelitis Hib (Schedule 1 only)**	DTP – 'Triple antigen' OPV – Sabin vaccine Hib vaccine (a or b)*
12 months	Measles, mumps and rubella Hib (Schedule 2 only)**	MMR Hib vaccine (c)*
18 months	Diphtheria, tetanus and pertussis Hib (Schedule 1 only)**	DTP – 'Triple antigen' Hib vaccine (a or b)*
Prior to school entry (4–5 years)	Diphtheria, tetanus and pertussis Poliomyelitis	DTP – 'Triple antigen' OPV – Sabin vaccine
10–16 years	Measles, mumps and rubella	MMR
Prior to leaving school (15–19 years)	Diphtheria and tetanus Poliomyelitis	ADT – Adult diphtheria and tetanus OPV – Sabin vaccine

* Abbreviations for Hib vaccines – (a) is HbOC ('HibTITER'); (b) is PRP-T ('Act-HIB'); (c) is PRP-OMP ('PedvaxHIB')

** There are two different schedules for Hib vaccines. Schedule 1 Hib vaccination applies to the use of HbOC and PRP-T. The selected vaccine is given at 2, 4, 6, and 18 months. Schedule 2 Hib vaccination refers to the use of PRP-OMP. This vaccine is given at 2, 4, and 12 months.

The term 'vaccination' and 'immunisation' are often used interchangeably, but their meanings are not exactly equivalent.

The term 'vaccination' means the administration (usually by injection) of a vaccine or toxoid, whether or not the injection is successful in making the recipient immune.

On the other hand, the term 'immunisation' denotes the process of inducing or providing immunity by the administration of an immunobiological product.

CENTRE NAME:..... ADDRESS:.....

VACCINATION RECORD: SURNAME:..... GIVEN NAME/S:.....

DATE OF BIRTH:..... DATE OF ENROLMENT:.....

AGE	VACCINATION	DATE GIVEN	DATE NEXT DOSE	DOCUMENT USED FOR VERIFICATION	SIGHTED BY: PLEASE PRINT NAME	SIGNATURE	DATE
2 Months	DTP (Triple Antigen)*						
	Sabin (polio)						
	Hib						
4 Months	DTP (Triple Antigen)*						
	Sabin (polio)						
	Hib						
6 Months	DTP (Triple Antigen)*						
	Sabin (polio)						
	Hib**						
12 Months	Measles, Mumps, Rubella						
	Hib**						
18 Months	DTP (Triple Antigen)*						
	Hib**						
4-5 Years or School Entry	DTP (Triple Antigen)*						
	Sabin (Polio)						

*If CDT given (no pertussis) please note.

** The Hib schedule varies depending on the vaccine used. Please refer to the NHMRC schedule.

I have chosen not to have my child vaccinated and understand that my child will be excluded for the prescribed period during any outbreak of a vaccine-preventable disease within the facility.

Parent signature:..... Date:.....

Developed from a NSW Children's Services Health & Safety Committee document

Sample for recording vaccinations

11 Watching for and recording infections in children

Checking for symptoms of illness

Because you care for the children in your group every day, you are probably used to the way each of them looks when they are healthy. This will help you to notice quickly when one of them is sick.

Symptoms

Be aware of symptoms of illness throughout the day. These are some of the things to look for:

- severe, persistent or prolonged coughing (child goes red or blue in the face, and makes a high-pitched croupy or whooping sound after coughing)
- breathing trouble (particularly in babies under 6 months old)
- yellowish skin or eyes
- conjunctivitis (tears, eyelid lining is red, irritated eyes, followed by swelling and discharge of pus from eyes)
- unusual spots or rashes (see page 68 for more information about rashes)
- patch of infected skin (crusty skin or discharging yellow area of skin)
- feverish appearance
- unusual behaviour (child is cranky or less active than usual, cries more than usual, seems uncomfortable or just seems unwell)
- frequent scratching of the scalp or skin
- grey or very pale faeces
- unusually dark, tea-coloured urine
- sore throat or difficulty in swallowing
- headache, stiff neck
- vomiting
- loss of appetite
- diarrhoea (an increase in the frequency, runniness or volume of the faeces)
- mucous discharge from the nose (thick, green or bloody).

What to do if a child seems unwell

- Tell the director and the parents.
- Separate the child from the other children.
- Take the child's temperature if you think they may have a fever. A child with a high temperature could have a febrile convulsion (a fit). That is why it is important to bring a high temperature down (see below).
- Remind a child who is coughing or sneezing to cover their mouth. Ask the child to **wash their hands** afterwards.
- If you wipe a child's nose, dispose of the tissue in a plastic-lined rubbish bin, and then **wash your hands**.
- If you touch a child who might be sick, avoid touching other children until after you have **washed your hands**.
- Keep moist skin conditions and abrasions covered unless directed otherwise by a doctor or nurse.
- Encourage parents to tell you when anyone in the family is ill. If someone in the family is sick, watch for signs of illness in the child.

Taking a child's temperature

Place the thermometer **under the child's arm** for at least three minutes. A reading taken under the arm will always be a little lower than the oral temperature (the temperature taken in the mouth). A normal oral temperature is a little less than 37°C. A normal temperature taken under the arm is a little over 36°C.

Bringing a temperature down

Bring a temperature down by giving the child paracetamol, removing the child's clothing, sponging or bathing the child in luke warm water, and fanning the child. To prevent dehydration, encourage the child to drink often.

Keeping records

The director should keep a record of any illness at the centre. Remember to record illness in both staff and children. It is important to record where the child or adult was for most of the day. A sample record is shown on page 31.

Keeping records can be a factor in preventing the spread of infection. Records show you when your approach to infection control is working. They are invaluable in helping you and public health workers identify the cause of any outbreak and how to control it.

Reporting to the parent and doctor

It may be useful for the parents and the child's doctor to have written information on the child's illness. A sample report form is given on page 32. A photocopy of this form should be kept in the child's file.

Sample record of illness in the centre

Name	Age	Symptoms	Room or group	When	
				Date	Time
John Smith	2	Rash, on head and neck	Toddlers	16/1/94	2 p.m.
Amy Johnson	6 months	Fever, runny nose	Babies	17/1/94	1 p.m.
Jason Brown	4	Weeping eye	Pre-school	17/1/94	4 p.m.
June Jones	33	Weeping eye	Pre-school	17/1/94	5 p.m.

Remember

Under 'Symptoms', record what you see as best you can.

Under 'When', record when you first noticed the illness.

You may wish to include further information, for example, the action taken (exclusion for four days, review of nappy changing practices etc.) and the doctor's diagnosis.

Sample report form for parent/doctor

Child Care Centre:

Address:

Phone:

Dear Parent/Doctor,

Re: *(child's name)* Date of birth:

Child has: (comments, including time observed)

Vomiting

Diarrhoea

Rash *(description of rash and where rash started)*

Other

There has/has not been recent similar illness in other children in the centre.

The diagnosis in the other children was:

The child's temperature was at time

The child has eaten

The child has drunk

The child passed urine at time

Parent contacted by at time

Signed:

Date:

12 Exclusion of sick children and staff

About exclusion

Remember

Recommended exclusion periods are based on the time that a person with a specific disease or condition might be infectious to others.

Recommended non-exclusion means there is not a significant risk of infection to others. A person who is not excluded may still need to stay at home because they do not feel well.

Some diseases require a medical certificate before the child or adult can be re-admitted to the centre. These diseases are: diphtheria, hepatitis A, polio, tuberculosis, typhoid and paratyphoid.

Sometimes, children and adults need to be away from the centre for the safety of others. This is called exclusion. The exclusion period is the **minimum period** to be away from the centre. However, a child or member of staff may need to stay at home longer than the exclusion period to recover from an illness.

Excluding sick children is an important way of preventing the introduction or re-introduction of infection into the centre. Parents may find an exclusion ruling difficult. Some parents will place great pressure on the director to vary the centre's exclusion rules. Often these parents are under great pressure themselves to fulfil their work commitments. This may lead to stress and to conflict between parents and centre staff.

The best way to avoid conflict is to have a **written policy** that clearly states the centre's exclusion criteria. This document should state the **minimum exclusion periods** recommended by the NHMRC. (These are listed on page 35.) The document should also state any additional conditions or exclusion periods your centre may have. For example, you may wish to state the centre's policy on excluding staff and children at times of an outbreak of infectious disease. Give the policy to all parents and staff when they first join the centre.

Directors should not be influenced by letters from doctors which allow the child back into care, unless the child's condition fulfils the criteria for return to care. Sometimes doctors make different diagnoses for children in the same centre with illnesses that appear similar. Your local public health authority will be able to help you with these situations and when you are in doubt about exclusion.

Written policies

The centre should have written policies on these subjects:

- immunisation records
- health records for each child
- administration of medication
- cleanliness, cleaning practices and food safety
- exclusion criteria for children and staff.

Involvement of parents

Provide parents with a copy of the centre's policies when the child is enrolled. Encourage parents to return and discuss these policies with you.

You may wish to include a permission note with the medication policy allowing staff to administer paracetamol if the child has a fever. It should be signed by the parent and returned to the centre. The exclusion policy is the policy most likely to cause concern. Make sure that parents understand why the centre has an exclusion policy.

Most parents will appreciate your attempts to prevent illness in their children. In particular, it is important that parents support the centre's policies on cleanliness. Ask parents to encourage their children to **wash their hands** on arrival at the centre and when leaving.

The exclusion process

- Diagnose the illness. You may need a medical opinion (for example, in cases of suspected measles or hand, foot and mouth disease), or else a staff member's opinion (for example, in cases of diarrhoea or fever).
- Decide if the condition requires exclusion.
- Decide when the child may return to the centre.

Recommended minimum periods of exclusion from school, pre-school and child care centres for cases of and contact with infectious diseases

National Health and Medical Research Council, June 1992

Condition	Exclusion of cases	Exclusion of contacts
Campylobacter	Exclude until diarrhoea has ceased.	Not excluded.
Chicken pox	Exclude until fully recovered or for at least five days after the eruption first appears. Note that some remaining scabs are not a reason for continued exclusion.	Any child with an immune deficiency (for example, leukaemia) or receiving chemotherapy should be excluded for their own protection. Otherwise not excluded.
Conjunctivitis	Exclude until discharge from eyes has ceased.	Not excluded.
Diarrhoea	Exclude until diarrhoea has ceased.	Not excluded.
Diphtheria	Exclude until medical certificate of recovery is received following at least two negative throat swabs, the first not less than 24 hours after finishing a course of antibiotics and the other 48 hours later.	Exclude family/household contacts until cleared to return by an appropriate health authority.
Glandular fever (mononucleosis)	Exclusion is not necessary.	Not excluded.
Hepatitis A	Exclude until a medical certificate of recovery is received, but not before seven days after the onset of jaundice or illness.	Not excluded.
Hepatitis B	Exclusion is not necessary.	Not excluded.
Human immuno-deficiency virus infection (HIV AIDS virus)	Exclusion is not necessary unless the child has a secondary infection.	Not excluded.
Impetigo	Exclude until appropriate treatment has commenced. Sores on exposed surfaces must be covered with a watertight dressing.	Not excluded.
Leprosy	Exclude until approval to return has been given by an appropriate health authority.	Not excluded.

Recommended minimum periods of exclusion continued...

Condition	Exclusion of cases	Exclusion of contacts
Measles	Exclude for at least four days after onset of rash.	Immunised contacts not excluded. Unimmunised contacts should be excluded until 14 days after the first day of appearance of rash in the last case. If unimmunised contacts are vaccinated within 72 hours of their first contact with the first case they may return to school.
Meningitis (bacterial)	Exclude until well.	Not excluded.
Meningococcal infection	Exclude until well.	Not excluded.
Mumps	Exclude for nine days or until swelling goes down (whichever is sooner).	Not excluded.
Poliomyelitis	Exclude for at least 14 days from onset. Re-admit after receiving medical certificate of recovery.	Not excluded.
Ringworm, scabies, pediculosis (lice), trachoma	Re-admit the day after appropriate treatment has commenced.	Not excluded.
Rubella (german measles)	Exclude until fully recovered or for at least four days after the onset of rash.	Not excluded.
Streptococcal infection (including scarlet fever)	Exclude until the child has received antibiotic treatment for at least 24 hours and the person feels well.	Not excluded.
Tuberculosis	Exclude until a medical certificate from an appropriate health authority is received.	Not excluded.
Whooping cough	Exclude the child for five days after starting antibiotic treatment.	Exclude unimmunised **household** contacts aged less than 7 years for 14 days after the last exposure to infection or until they have taken five days of a 14-day course of antibiotics. (Exclude close child care contacts until they have commenced antibiotics.)

13 Occupational risks for child care workers

Child care workers are at risk of getting infectious diseases. Infection control practices such as **handwashing** can stop disease spreading at the centre among staff and children.

Immunisation can also stop workers from getting some diseases. The director should make sure that workers' immunisations are up to date. Child care workers should discuss their history of measles and rubella immunisation or infection with their doctor. They may also wish to discuss whether or not to have additional immunisations, such as the influenza vaccine.

Infected workers may be excluded from the centre. (See the list of NHMRC recommended exclusion periods on page 35*.)

Hepatitis A

A vaccine for Hepatitis A is now available. Overseas studies of outbreaks of hepatitis A suggest that child care workers whose duties include changing the nappies of children under 2 years of age are at increased risk of developing hepatitis A. Hepatitis A vaccine is therefore recommended for child care workers who care for children under 2 years of age.

Hepatitis B

Working at a child care centre is not a significant risk factor in acquiring hepatitis B. Hepatitis B vaccine is therefore not recommended for routine use in staff or children in child care settings.

Tuberculosis

Adults employed at children's facilities should have a pre-employment health screen This should include a tuberculin skin test (Mantoux test) and a chest X-ray. Adults who have spent some time working overseas and then resume working with children should have employment TB health checks before starting work again.

Infectious diseases during pregnancy

Child care workers who are pregnant need to be aware of how some infections can affect the unborn child. This is a good time for the centre to make sure that all workers are following good infection control practices.

Rubella (german measles)

It is especially important for women of child bearing age to be protected against rubella. If a pregnant woman contracts rubella, her baby may be born deaf, blind or with heart and lung damage. Because rubella is difficult to diagnose, a past history of the disease is unreliable as a guide to immunity. A blood test will show whether or not you have had rubella.

Cytomegalovirus (CMV)

CMV infection in early pregnancy may affect the unborn child. The infant may be unaffected, deaf or have multiple abnormalities. Whether the baby is affected depends on many factors. The two main factors are previous CMV infection and the stage of pregnancy. The risk is very low if the mother has had CMV infection before. The risk of severe effects may be higher if the mother catches the disease in early pregnancy. The chance of child care workers acquiring CMV infection when looking after 3 year olds seems to be greater than that of hospital staff or the general public. Child care workers may wish to have a blood test for CMV immunity before becoming pregnant. This would allow them to make an informed decision about work practices and to discuss these with their doctor.

Toxoplasmosis

Child care workers are not at greater risk of contracting toxoplasmosis than other people. Toxoplasma infection in pregnancy may lead to congenital abnormalities. There is no risk if the mother has had the disease before, but this is often unknown. Toxoplasmosis is acquired from contact with cat faeces (in soil or sandpits) or eating poorly cooked meat. If you are considering pregnancy, then a blood test will tell you if you have already had toxoplasmosis.

Erythema infectiosum, also called parvovirus or fifth disease

The symptoms of this disease are slapped cheek rash (red cheeks that look as though they have been slapped) or arthritis. A pregnant women who develops these symptoms should discuss this with her doctor. Parvovirus causes miscarriage or still births in a **small** percentage of women infected during pregnancy. Malformations **do not** appear to occur in babies who survive this infection in the mother.

Chicken pox

Most child care workers will probably have had chicken pox as a child and will not get it again. Infection with chicken pox in the first three months of pregnancy may damage the unborn child. Pregnant women who are exposed to chicken pox at any stage of the pregnancy should see their doctor soon after exposure. The doctor may give varicella zoster immunoglobulin (VZIG). This is an injection of antibodies against chickenpox.

14 The role of public health workers

The health department in each state or territory has public health workers. These people are available to advise and assist individuals and institutions in the community.

Each state has laws stating that doctors must notify a number of infectious diseases. Child care staff should also report certain infectious diseases to public health personnel.

The **centre benefits** because public health personnel may be able to help:

- identify the cause of the illness
- explain the consequences to children and staff of an infection
- trace the source of the infection (for example, contaminated food)
- advise on appropriate control measures (for example, vaccines, antibiotics, exclusion, education, infection control practices).

The **community benefits** because:

- people become aware that a particular infection is common
- the effectiveness of immunisation programs in the pre-school population can be assessed.

Public health workers can provide valuable advice and support and have access to resources that may be necessary to manage outbreaks.

NHMRC recommended notifiable diseases

Arbovirus infection (NEC)
- Ross River virus infection
- Dengue

Brucellosis
Campylobacteriosis
Chancroid
Chlamydial infection (NEC)
Cholera
Diphtheria
Donovanosis
Gonococcal infection
Haemophilus influenzae type b infection
Hepatitis A
Hepatitis B
Hepatitis C
Hepatitis (NEC)
HIV infection
Hydatid infection
Legionellosis
Leprosy
Leptospirosis
Listeriosis
Lymphogranuloma venereum
Malaria
Measles
Meningococcal infection
Ornithosis
Pertussis
Plague
Poliomyelitis
Q fever
Rabies
Rubella
Salmonellosis (NEC)
Shigellosis
Syphilus
Tetanus
Tuberculosis
Typhoid
Viral haemorrhagic fever (NEC)
Yellow fever
Yersiniosis

NEC=not elsewhere classified

Part 2

Specific diseases

This part of the book gives information on specific infectious diseases. In the following pages, you will find infections of a similar nature grouped together. The order is as follows:

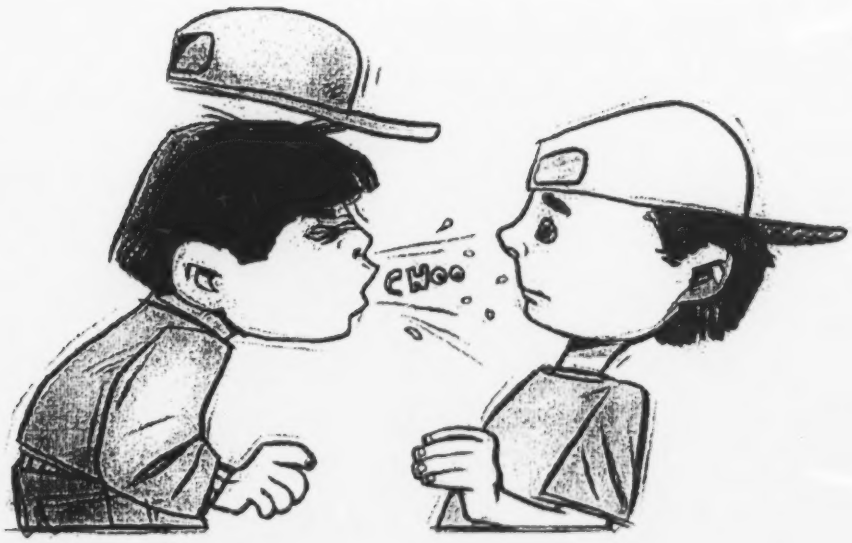
Respiratory complaints 43

Gastrointestinal complaints (diarrhoea and vomiting) 55

Skin complaints (rashes and bites) 67

Other complaints 91

Respiratory complaints



Bronchiolitis

Description

This potentially serious infection is common in infants under 1 year of age. The infection begins like any common cold, but soon develops into a cough, rapid breathing and wheezing to the extent that feeding becomes difficult. Wheezing when breathing out is characteristic of bronchiolitis. This happens when inflammation causes the small airways (called the bronchioles) to become obstructed. Seek medical advice if the child develops these symptoms. The respiratory syncytial virus (RSV) is most often responsible for bronchiolitis, although other viruses may cause outbreaks.

The disease is transmitted directly by oral contact or airborne droplets, or indirectly by hands, tissues, eating utensils, toys or other articles freshly soiled by the nose and throat discharges of an infected person.

Incubation period

4–5 days.

Infectious period

Shortly before the onset of symptoms and during the active stage of the disease.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude until the child is feeling well.

Treatment

A child with acute bronchiolitis will need medical assessment. A child with mild bronchiolitis may be treated at home. The child may benefit from a warm, humid atmosphere (a humidifier or steam). Increase the child's fluid intake. Use paracetamol to lower a high temperature and relieve a sore throat. Decongestant medication may help relieve symptoms. Some children with bronchiolitis may need to stay in hospital for a short time to receive specialised medical treatment.

Bronchitis

Description

Bronchitis is an inflammation of the mucous membrane of the bronchial tubes. It is caused by viruses (especially influenza virus), bacteria (especially streptococcus pneumoniae, see strep throat, page50*), and several other organisms. Infection is often preceded by a cold. Early symptoms include: fever; a short, painful, dry cough with a rapid wheezing respiration; a feeling of rawness and pain in the throat and behind the breastbone; and a feeling of tightness throughout the chest. After a few days the person begins to cough up mucus and usually the other symptoms lessen. Note that asthma is often misdiagnosed as bronchitis. Therefore, bronchitis should only be diagnosed by a doctor.

The disease is transmitted directly by oral contact or airborne droplets, or indirectly by hands, tissues, eating utensils, toys or other articles freshly soiled by the nose and throat discharges of an infected person.

Incubation period

1–10 days.

Infectious period

Shortly before the onset of symptoms and during the active stage of the disease.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude until the child is feeling well.

Treatment

In mild cases, bed rest in a warm environment for a few days, with a light diet and nourishing drinks, may be all that is needed.

In more serious cases, the doctor may prescribe antibiotics. Cough medicines may help relieve symptoms. From the onset of the attack, warmth to the chest may give relief. This can be in the form of a rubber hot water bottle filled with warm (not hot) water or a medicinal chest rub.

Common cold

Description

The common cold is caused by many different viruses. Symptoms include a runny, stuffed up nose, sneezing, coughing and a mild sore throat, with little or no fever. Children under age 5 may get several colds a year.

Colds are spread directly by contact with airborne droplets (coughing and sneezing), or indirectly by contaminated hands, tissues, eating utensils, toys or other articles freshly soiled by the nose and throat discharges of an infected person.

Incubation period

About 1–3 days.

Infectious period

From about one day before symptoms begin and during the first five days of illness.

Responsibilities of child care providers and parents

Report the infection to the director.

Controlling the spread of infection

Do not exclude a child with a common cold.

Teach children to cover the mouth when sneezing or coughing and to wash their hands after blowing their noses.

Dispose of tissues soiled with nose and throat discharges.

Ensure staff wash hands after contact with soiled tissues or contact with nose and throat discharges.

Treatment

No specific treatment. Medicines containing paracetamol and decongestants may help to relieve symptoms in children older than 3 months. Take younger children to the doctor. Do not give aspirin to any child with a fever.

Comments

Watch for new or more severe symptoms. They may indicate other more serious infections.

Croup

Description

Croup is any kind of inflammation of the larynx or voice box that occurs in children. It is not a single disorder in itself. The characteristic features of croup are a harsh, barking cough and a noisy, harsh sound when breathing in. This noise is caused by air vibrating as it passes through the narrowed, inflamed larynx. Seek medical advice if the child develops these symptoms.

Several viruses may cause croup. These include parainfluenza, respiratory syncytial virus (RSV) and various influenza viruses.

Incubation period

Difficult to define, but about 2–4 days.

Infectious period

Shortly before the onset of symptoms and during the active stage of the disease.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude until the child is feeling well.

Treatment

A child with croup will need medical assessment. The doctor may recommend that a child with mild croup be treated at home. The child may benefit from a warm, humid atmosphere (a humidifier or steam). Increase the child's fluid intake. Use paracetamol to lower a high temperature and relieve a sore throat. It is likely that a child with severe croup will need to stay in hospital for a short time to receive specialised medical treatment.

Ear infections (otitis)

Description

Ear infections are common in childhood. They may be middle ear infections (otitis media) or outer ear infections (otitis externa).

Middle ear infections occur on the inside of the ear drum. Because this is a small area, infection leads to an increase in pressure on the eardrum and therefore pain. Young children will not be able to tell you they have a sore ear. However, you may notice that the child is pulling or rubbing the ear, has a fever or is vomiting. The child may be distressed. Severe crying that stops suddenly may mean that the eardrum has burst. Fluid will discharge from the ear if the drum has burst. Otitis media can be caused by either bacteria or viruses. The bacteria causing middle ear infections are commonly found in the throat. Children may get a middle ear infection a few days after getting a common cold. Even if well enough to attend the centre, children with ear infections may be irritable due to lack of sleep. Giving them paracetamol before sleep times may help.

Outer ear infections occur on the outside of the ear drum, called the ear canal. They are commonly associated with swimming. The ear will discharge fluid.

Incubation period

A few days.

Infectious period

Middle ear infections are complications of colds and are **not** spread from one child to another. Organisms can only be passed from one child to another **if and while** there is infectious fluid draining out of the ear.

Responsibilities of child care providers and parents

Report the infection to the director.

Control of spread

A child should not attend the centre while there is any fluid coming out of the ear.

Any discharge from an ear should be treated as infectious. **Wash hands** thoroughly.

A child with a middle ear infection may return as soon as they feel well enough. The child will often still need to be given antibiotics after returning to care.

Treatment

Middle ear infection. Antibiotics, taken by mouth. Use paracetamol to relieve pain.

Outer ear infection. Antibiotics, given as drops in the ear or placed in the ear canal with wicks.

Comments

As ear infections are hard to detect in young children, suspect an ear infection with all fevers and vomiting. Watch the child for any signs of pulling or rubbing of ears. Rarely, a middle ear infection may spread and the child may develop mastoiditis. The area behind the ear will be red and the ear lobe will stick out and down. A child with these symptoms should see a doctor as soon as possible.

Influenza

Description

Influenza is an acute viral disease of the respiratory tract characterised by fever, chilliness, headache, muscle pain, a head cold and a mild sore throat. The cough is often severe. Usually the person will recover naturally within 2–7 days.

Incubation period

Usually 1–3 days.

Infectious period

Probably limited to three days from the onset of symptoms.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

An accurate diagnosis of influenza requires a blood test or throat swab. Generally this test is not considered necessary.

Exclude a child or staff member with suspected or confirmed influenza from the centre until they look and feel well.

Teach children to cover the mouth when sneezing or coughing and to **wash their hands** after blowing their noses.

Dispose of tissues soiled with nose and throat discharges.

Wash hands after contact with soiled tissues and articles and after contact with nose and throat discharges.

Treatment

No specific treatment. Antibiotics should be given for bacterial complications **only**. Medicines containing paracetamol and decongestants may help to relieve symptoms in children older than 3 months. Take younger children to the doctor. Do not give aspirin to any child with a fever.

Comments

Watch for new or more severe symptoms. They may indicate other, more serious infections.

Flu vax (influenza vaccine) is available and may protect staff against influenza. Staff who wish to have the influenza vaccine should consult their own doctor.

Influenza vaccine is not given routinely to children unless the child has a chronic, debilitating disease, for example, a chronic cardiac (heart) disorder, a pulmonary (lung) disorder, a renal (kidney) disorder or a metabolic disorder.

Sore throats and streptococcal sore throat (strep throat)

Description

Sore throats are caused by viruses or bacteria. Children do not commonly complain of a sore throat. However, they may have a fever or be reluctant to eat or drink. Children with a sore throat should see a doctor to assess any need for antibiotics.

A **strep throat** is a bacterial infection which can cause fever, sore throat, and oozing and redness of the tonsils and the upper part of the throat.

Viral and bacterial throat infections are spread directly by contact with airborne droplets (coughing and sneezing), or indirectly by contaminated hands, tissues, eating utensils, toys or other articles freshly soiled by the nose and throat discharges of an infected person.

Scarlet fever is a combination of strep throat and a skin rash (see page 86).

Incubation period

Usually 1–3 days.

Infectious period

As long as organisms are being spread by coughing, sneezing etc.

Bacterial sore throats last only for about 24 hours after appropriate treatment begins. People with untreated bacterial infections remain infectious as long as they are sick—usually 3–7 days.

Viral tonsillitis and sore throats may last several days.

Responsibilities of child care providers and parents

Report the infection to the director.

Report group outbreaks to the local health authority so that public health workers can help control the spread of the illness.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Send a child with strep throat symptoms to a doctor for assessment and a throat swab culture.

Exclude a child diagnosed as having strep throat until appropriate medical treatment is given.

Do not exclude a child without symptoms, even if the child has a positive throat culture.

We do not recommend routine screening of all children and employees in the centre unless there is evidence of an ongoing epidemic as determined by the local health authority or unless strep kidney disease has occurred.

Follow good personal cleanliness practices. Cover the nose and mouth when coughing or sneezing. Dispose of soiled tissues after wiping a runny nose. **Wash hands** carefully. Do not share eating utensils, food or drinking cups. Disinfect toys that infants and toddlers put in their mouths.

Treatment

Penicillin or other antibiotics as prescribed by a doctor.

To prevent potential complications such as rheumatic fever, antibiotics should be continued for 10 days.

Tuberculosis (TB)

Description

Tuberculosis is primarily an infection of the lungs but it can affect all parts of the body. It is caused by bacteria. Most infected children have a mild fever that resolves without treatment. Often the presence of infection is first noted when the child develops a positive skin test (after a Mantoux test). TB is spread by contact with airborne droplets (coughing, sneezing, singing, talking etc.) from a person who has active TB.

Incubation period

About 4–12 weeks from infection to positive skin test. The risk of active disease is greatest within the first year or two after infection, although the germs may lie inactive for many years.

Infectious period

Young children rarely transmit TB, even if they have a positive skin test. Adults are infectious as long as they have active TB in the lungs and are not under treatment.

Responsibilities of child care providers and parents

Parents should inform the director if their child has TB.

The director must inform the local public health authority if any child is suspected of having TB.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Because children who have **inactive** TB disease are not usually infectious, they may continue to attend the centre with the approval of the health authority. However, a child or staff member with **active** TB should be excluded until treatment has been given for one month. Re-admit the child on the advice of a public health medical officer.

If an active case of TB occurs at a child care centre, the health authority may suggest skin testing of employees, children and volunteers at the centre.

Adults employed in child care centres should have a pre-employment health screen which includes a tuberculin skin test (Mantoux test) and a chest X-ray.

Adults who have spent some time working overseas and then resume working with children should have a pre-employment TB health check before starting work again.

Treatment

People with TB will be given anti-TB drugs under the care of their doctor or the Chest Clinic.

Whooping cough (pertussis)

Description

Whooping cough is a highly contagious bacterial disease. The illness may begin with cold-like symptoms which progress to a cough, or the child may simply begin coughing. After several days, severe coughing fits may cause the child to vomit after coughing or to lose their breath. Sometimes a high-pitched crowing (the whoop) is heard when inhaling. The coughing can last 1–3 months. Whooping cough is diagnosed by culturing specimens from the nose and throat. The disease is extremely distressing to the child. Whooping cough is particularly serious in children under 2 years of age and hospitalisation is usually necessary. Whooping cough is transmitted by direct contact with droplets from the nose and throat of an infected person.

Incubation period

Commonly 7–10 days and not more than 21 days.

Infectious period

Highly contagious in the early stages. The child is no longer infectious to others five days after starting antibiotic treatment with erythromycin.

Responsibilities of child care providers and parents

Inform the director. The director should inform parents immediately if their child exhibits symptoms. Parents should then consult their doctor or clinic immediately.

The director and/or the parents should inform the local health authority.

Parents or friends and contacts of the infected child should be notified that the child has been diagnosed as having whooping cough and advised to contact their doctor.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude the child until well and until five days after starting antibiotic treatment.

Exclude unimmunised household contacts aged less than 7 years for 14 days after the last exposure to infection or until they have received five days of a 14-day course of antibiotics.

Exclude unimmunised close (child care) contacts from care until they have commenced antibiotics.

Exclude an unimmunised child who does not take antibiotics until 10 days after the last case of whooping cough has been detected.

Prevention

Fully immunised communities offer the best protection against whooping cough. Erythromycin may be given to friends and people in close contact with the disease.

Treatment

Antibiotics may be given to shorten the period of contagiousness of a child with whooping cough. However, these do not lessen the severity or duration of the illness.

Comment

Protection from whooping cough is best achieved through adequate immunisation with DTP (triple antigen) vaccine starting at age 2 months. Adults and teenagers are susceptible to the illness as well and may carry the bacteria while exhibiting only mild symptoms.

Gastrointestinal complaints (diarrhoea and vomiting)

Diarrhoea and vomiting (gastroenteritis)

Description

Diarrhoea is an increase in the frequency, runniness or volume of the faeces. It may be caused by different organisms, for example viruses (such as rotavirus), bacteria (such as campylobacter, salmonella and shigella), and parasites (such as giardia and cryptosporidium). Diarrhoea is spread when hands, objects and surfaces become contaminated with organisms from faeces. Infected people do not always show symptoms.

Campylobacter and salmonella infections can result from drinking contaminated water or unpasteurised (raw) milk or by eating contaminated food, especially undercooked poultry, fish or shellfish. Sometimes, diarrhoea has a non-infectious cause, such as antibiotic treatment. The exact cause of the diarrhoea can only be diagnosed by laboratory tests of faecal specimens. Sometimes multiple specimens must be tested.

Other symptoms which may accompany diarrhoea include vomiting and stomach pain. Blood or mucus may be seen in the faeces, especially in bacterial infections. Diarrhoea can cause dehydration and serious illness requiring hospitalisation.

Incubation period

Viral and bacterial infections, usually 1–3 days.

Parasitic infections, 5–15 days.

Infectious period

People are infectious for as long as the organisms are present in their faeces, whether or not they are ill.

Responsibilities of child care providers and parents

Inform the director, who can then inform parents that the disease is present in the centre.

When several children in one group are ill with diarrhoea, your local public health authority should be contacted for advice and help in controlling the outbreak.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

A person with active diarrhoea is more likely to spread the disease than one who is well but has infectious organisms in their faeces. For this reason, **children and staff** with infectious diarrhoea should not attend the centre until diarrhoea has stopped.

Do not exclude children with organisms in their faeces but no diarrhoea.

Staff with organisms in their faeces but no diarrhoea should not be involved in the preparation of food.

Review the centre's infection control practices, including nappy changing, toileting and **handwashing** procedures.

Ensure that food is properly cooked and stored.

Treatment

(This section draws on information provided in the NHMRC pamphlet, Fluid Replacement in Gastroenteritis, *published in 1991.)*

Preventing dehydration in children with gastroenteritis

Children with diarrhoea need extra fluid to replace what they lose. However, many fluids have too much sugar and the wrong amount of salt. Giving a sick child the wrong kind of fluid can lead to more dehydration and illness.

Safe drinks

The best fluids to give contain a mixture of special salts (electrolytes) and sugars.

For severe diarrhoea give gastrolyte (1 packet in 200 ml water). Gastrolyte is available from the chemist.

For mild diarrhoea give sugar water (1 heaped teaspoon of sugar in 1 cup of water).

Drinks for older children

If older children refuse gastrolyte or sugar water they may be given diluted soft drinks or fruit juice. These drinks should **not** be given to infants.

Orange juice (1 part to 3 parts water)

Apple juice, cola drinks and lemonade (1 part to 4 parts water)

Unsafe drinks

Do not give drinks such as repalyte, staminade and lucozade to children with diarrhoea.

Breastfed children

Breastfeeding mothers should continue to breastfeed as usual, but should supplement breastmilk with extra fluid (such as sugar water or gastrolyte) using a spoon or bottle.

Re-introducing food

Re-introduce food within 24 hours, even if the diarrhoea has not settled. Suitable foods to start off with include bread, plain biscuits, potatoes, rice, noodles, vegetables, plain meats, fish and eggs. Gradually re-introduce other foods, such as dairy foods and sweet foods such as jelly, honey and jam.

Comments

Children with severe diarrhoea, who vomit or who refuse extra fluids should see a doctor. In severe cases hospitalisation may be needed.

The parent and doctor will need to know the details of the child's illness while at the centre. Start a diary of the child's activities from the time you notice illness. Observe and write down when the bowel motions occurred (time and day), what the bowel motion looked like (watery, light/dark coloured, contained blood or mucus), when vomiting occurred, when and how much the child ate and drank, and if the child had a nappy wet with urine or passed urine in the toilet.

Campylobacter

Description

Campylobacter is an intestinal infection. The bacteria, Campylobacter, can be identified through a faecal culture. Symptoms may include diarrhoea (sometimes bloody), a low-grade fever and abdominal cramping. The disease spreads when hands, objects or food become contaminated with the faeces of infected people and the bacteria are then taken in by mouth. Infection may result from drinking contaminated water or unpasteurised (raw) milk, or by eating contaminated food, especially undercooked poultry, fish or shellfish.

Incubation period

1–10 days, commonly 3–5 days.

Infectious period

For as long as the bacteria are in the person's faeces. This may be for a few days or weeks after symptoms are gone.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea from the centre until diarrhoea has ceased.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

Antibiotics are usually prescribed only when a child is not recovering from the illness. Recovery usually occurs within a few days of the onset of symptoms. Parents should consult their doctor about treatment.

Cryptosporidiosis

Description

Cryptosporidiosis is an infection caused by a parasite called Cryptosporidium. The parasite infects the intestine. Often, the infected person has no symptoms at all. The organism is usually identified by laboratory examination of a faecal specimen. Symptoms include vomiting, loss of appetite, stomach pain and foul-smelling diarrhoea. The faeces are often watery in appearance or may contain mucus. The disease spreads when hands, objects or food become contaminated with the faeces of infected people and the bacteria are then taken in by mouth. Animals may also be a source of infection.

Incubation period

Probably 10 days.

Infectious period

For as long as the organism is in the person's faeces, whether or not the person is ill (usually 2–4 weeks).

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea from the centre until diarrhoea has ceased.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

No treatment is available.

Giardiasis

Description

Giardiasis is an intestinal disease caused by a parasite called Giardia lamblia. The organism is identified by a microscopic examination of a faecal specimen. Symptoms include diarrhoea, foul-smelling faeces, cramping, excessive gas or bloating, fatigue, nausea, and sometimes vomiting or weight loss. Fever and bloody faeces are not usually symptoms of giardia infections. Many infected people and animals have no symptoms. In child care centres, children and adults may be well and not have diarrhoea but still be infected with the parasite. This makes their faeces potentially infectious to other children. A person with active diarrhoea is more likely to spread the disease than one who is well but has infectious organisms in their faeces.

Giardiasis spreads when hands, objects or food become contaminated with the faeces of infected people and the parasites are then taken in by mouth. Infection may also result from drinking water contaminated by infected humans or animals.

Incubation period

5–15 days, commonly 6–9 days.

Infectious period

For as long as the organism is in the person's faeces, whether or not the person is ill.

Responsibilities of child care providers and parents

Report the infection to the director.

Contact your local health authority if several children in one group are ill with giardia. Public health workers may be able to help identify how the parasite has spread through the centre and prevent further infection.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea from the centre until diarrhoea has ceased.

Be sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

The person will not usually be infectious after being treated for several days. Ask parents to check with their doctor about treatment. It is not usually necessary to test or treat children who have no symptoms.

Rotavirus

Description

Rotavirus is an intestinal infection caused by a virus. The virus can be identified by laboratory testing of faeces. Rotavirus infections occur mostly in winter. Symptoms include vomiting, fever and watery diarrhoea. Onset is usually sudden, and the illness mainly affects infants and young children up to 3 years of age. Rotavirus spreads when hands, objects or food become contaminated with infected faeces. It may possibly be spread by respiratory secretions as well.

Incubation period

About 48 hours.

Infectious period

The virus may be excreted in the stool for 1–2 days before the illness and up to eight days after the illness.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea and vomiting from the centre until vomiting and diarrhoea has ceased.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

Take a child with vomiting and diarrhoea to the doctor. Drugs are usually not prescribed. It is very important to give the child plenty to drink. (See page 57 for recommended fluids.)

Salmonella

Description

Salmonella is an intestinal infection caused by bacteria. The germ can be identified by a faecal culture. Symptoms include diarrhoea, fever, abdominal pain, nausea and vomiting, sometimes with blood or mucus in the faeces. Salmonella spreads when hands, objects or food become contaminated with the faeces of infected people and the bacteria are then taken in by mouth. Infection may also occur as a result of drinking unpasteurised (raw) milk, touching raw poultry and meats and not washing hands afterwards, or contact with infected pets.

Incubation period

6 hours to 3 days, usually 12–36 hours.

Infectious period

Throughout the illness, and for a variable period of time after the illness is over.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea from the centre until the diarrhoea has ceased.

Do not exclude a person with organisms in their faeces but no diarrhoea.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

A person with salmonella in their faeces **must not** be involved in food preparation. Staff may resume handling food when three separate faeces samples show that no salmonella is present.

Treatment

Treatment with antibiotics is **not** usually recommended for salmonella infections. Use of antibiotics sometimes results in the person becoming a carrier. The person then appears well but is infectious to others.

Recovery from salmonella infection usually occurs within a few days of the onset of symptoms. Parents should consult a doctor about treatment.

Shigella

Description

Shigella is a severe intestinal infection caused by bacteria. Symptoms include diarrhoea (sometimes containing blood or mucus), fever, vomiting and cramps. Some infected people have no symptoms. Shigella spreads when hands, objects or food become contaminated with the faeces of infected people, and the bacteria are then taken in by mouth. Very small numbers of the bacteria are sufficient to cause an infection. Stringent control measures are needed.

Incubation period

1–7 days, usually 1–3 days.

Infectious period

While ill and for a few days afterwards.

Responsibilities of child care providers and parents

Report the infection to the director.

Contact the local health authority if two cases occur in the centre.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a person with infectious diarrhoea from the centre.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

A person with shigella in their faeces **must not** be involved in food preparation. Staff may resume handling food when three separate faeces samples show that no shigella is present.

Treatment

A child with this infection may become seriously ill. The child may need hospitalisation. Seek medical advice on treatment and fluid replacement. The doctor may prescribe antibiotics.

Worms: Pinworm

Description

There are many worms that can infest children. Most, however, need to live for a period in water, soil or animals before they become infectious to humans. In Australia, with its temperate, dry climate and adequate town sewerage facilities, very few worms are transmitted. In child care centres, the most common worm is the pinworm (also called Enterobius vermicularis). Symptoms of pinworm infection include itchy bottom, irritability and behavioural changes. Sometimes a thin, adult pinworm, about 1 cm long, is found on freshly passed faeces. Pinworms are spread when the person scratches or touches the anal area (where the pinworm lays its eggs) and then puts their hands to their mouth. Occasionally eggs on infected clothing may be breathed in and then enter the gut (where the adult pinworm lives). Pinworms do not infect dogs and cats so domestic pets are not a source of infection.

Incubation period

Approximately one month after eggs enter the gut, the female pinworm emerges to deposit her eggs.

Infectious period

Pinworms can spread as long as worms live in the gut. Infection will continue until the person is treated. Immunity does not occur. Both adults and children are susceptible.

Responsibilities of child care providers and parents

Signs of pinworm infection should be reported to the director.

Controlling the spread of infection

Encourage parents to seek medical treatment for infected children. The child will be free of pinworm infection within a day if the child receives treatment and clothes and bed linen are washed in hot water.

Do not exclude a child with pinworm from the centre.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

Treatment of pinworm is simple, safe and effective. The family doctor may wish to confirm the infection with a simple laboratory test. In most cases, though, the doctor will prescribe treatment on symptoms alone. A single-dose therapy is given to the child and **each family member**. This is repeated after two weeks. Treatment of other children at the centre is not necessary.

Worms: Roundworm, hookworm and tapeworm

Description

Infection with roundworms, hookworms and tapeworms (including hydatid tapeworm) is uncommon. However, it is still important to observe good personal cleanliness, as infections with hydatid tapeworm or roundworms can have serious effects.

Incubation period

Eggs or larvae can begin to be passed in the faeces several weeks after infection, depending on the species of worm involved (six weeks in the case of hydatid tapeworms; see hydatid disease on the following page). Symptoms may not be obvious until months or years after the infection was acquired.

Infectious period

Transmission is possible throughout the period of infestation. Infection will continue until the person is treated. Immunity does not occur. Both adults and children are susceptible.

Responsibilities of child care providers and parents

Report cases of hydatid disease to the local health authority.

Controlling the spread of infection

Do not exclude the infected person from the centre.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Dispose of animal faeces frequently (using gloves) and prevent children from eating dirt.

Ensure that animals are wormed regularly with anti-parasitic preparations specific to the worms present in that area. Where hydatid tapeworm is endemic, worm animals every six weeks.

Sheep carcasses and infected offal should be disposed of to prevent hydatid infection of dogs (which then infect humans).

Stray and free-roaming farm dogs should be restrained to restrict the spread of hydatid tapeworm.

Pregnant bitches should be treated for roundworms. Larvae which are dormant in the bitch's body from a previous infection may infect the unborn puppies. Bitches should be re-treated 3–4 weeks after having the puppies.

Treatment

Diagnosing worm infections requires laboratory tests. Seek medical advice. Except for pinworms, treatment of worm infections varies according to the type of worm and the person's symptoms.

Worms: Hydatid disease

Description

Hydatid disease is caused by a small tapeworm called Echinococcus granulosis. This is passed on to humans from infected dogs. The disease is transmitted when tapeworm eggs in dog faeces are transferred from hands to mouths. This may happen when a person handles dogs or objects soiled with dog faeces, or ingests contaminated food or water. Hydatid disease is **not** transmitted directly from person to person.

Hydatid disease causes cysts to grow in different parts of the body. Any organ may be affected. Sometimes these cysts cause no symptoms at all and are found during routine chest X-rays. However, if the cysts grow in vital organs (such as the liver, lungs, kidneys, spleen or bones) they may cause disease. Hydatid disease is essentially a problem of the rural community, especially the sheep farmer.

Incubation period

Variable, from months to years, depending upon the number and location of cysts and how rapidly they grow.

Infectious period

Dogs begin to pass eggs of the parasite approximately seven weeks after becoming infected. Most infections in dogs resolve within six months, but some adult tapeworms may survive as long as 2–3 years. Dogs can become infected repeatedly.

Responsibilities of child care providers and parents

Ensure routine de-worming of dogs in the community and particularly dogs that frequent the centre.

Controlling the spread of infection

Do not exclude an infected child.

Ensure that adults and children **wash their hands** before eating.

Dispose of dog faeces regularly, wearing gloves.

Treatment

This may be drug therapy, or surgery to remove the cysts.

Skin complaints (rashes and bites)

General notes on rashes

Rashes are common in children. They can be caused by many different viral infections and may not be infectious. It is important to be able to describe the rash. This helps with diagnosis. Some features to notice with rashes are:

Illness

Does the child look unwell? The rash may not affect the child's well-being at all.

Fever

Take the child's temperature with a thermometer.

Appearance

What colour is the rash?

What does the rash look like?

- small, red, pin-heads
- fine and lacy
- large red blotches
- solid red area all joined together
- blisters.

How does the rash feel to the touch?

- raised slightly, with small lumps
- swollen.

Is the rash itchy?

Where on the body did the rash start (for example, head, neck)?

Where is the rash now (for example, head, neck, abdomen, arms, legs)?

Chickenpox

Description

Chicken pox is a viral illness that comes on suddenly. Symptoms include fever, runny nose, cough, fatigue and a general rash. Each sore begins as a small bump which becomes blister-like for 3–4 days, then leaves a scab. Several crops of these blisters will come out over a period of days, so at any one time, the child will have sores in various stages of development. The rash tends to be more noticeable on the trunk of the body than on exposed parts of the body. It may appear inside the mouth, on the scalp and in the upper respiratory tract. Chicken pox is highly contagious. It is spread by coughing and contact with a moist rash. One infection gives long-lasting immunity. People rarely get chicken pox twice.

Herpes zoster (shingles) is caused by the same virus. It is an eruption in someone who has previously had chickenpox. Direct contact with the moist shingles rash can cause chickenpox in a child who has not already had it.

Incubation period

13–17 days.

Infectious period

From two days before the rash appears (that is, during the coughing, runny nose stage) and until all blisters have formed scales or crusts.

Responsibilities of child care providers and parents

Report the infection to the director, who can then inform parents that the disease is present in the centre.

Remind parents that aspirin should not be given.

Pregnant women should be advised to avoid contact with chicken pox.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude infected children from the centre until all blisters have crusted, there are no moist sores, and the child feels well.

Dispose of tissues soiled with nose and throat discharges.

Varicella zoster immune globulin (VZIG) may be given to some contacts who are at very high risk of complications because of other medical problems. This is not recommended for normal healthy children.

Follow good personal cleanliness practices. Cover the nose and mouth when coughing or sneezing. Dispose of soiled tissues after wiping a runny nose. **Wash hands** carefully. Do not share eating utensils, food or drinking cups. If there is an outbreak, disinfect mouthed toys after washing them.

Treatment

There is no specific treatment, but calamine lotion or phenergan may soothe the itch. Use a medicine containing paracetamol to lower the child's temperature or relieve discomfort. **Never give aspirin** to children who develop fever after exposure to chickenpox. Aspirin appears to increase the risk of Reye's syndrome, a rare but serious disorder characterised by sleepiness and vomiting. Reye's syndrome can lead to coma and death.

Cold sores (herpes simplex)

Description

Cold sores are caused by herpes simplex viruses—usually type 1 and rarely type 2. The area of infection usually reddens and then fluid-filled blisters develop. The blisters tend to recur on the same part of the person's body, for example, the lips, gums and mouth (causing a condition called gingivostomatitis), the eyes, or other parts of the body. There may be a single blister or a number of blisters present at one time. These blisters burst, becoming ulcers which eventually heal. New skin then grows over the affected area. Once infected with this virus, the person has it for the rest of their life. Therefore, cold sores may recur.

Often, cold sores recur when a person is under stress, exposed to sunlight, unwell or run-down, or undergoing hormonal changes. Sometimes, though, they re-appear for no apparent reason.

Incubation period

3–10 days.

Infectious period

Until the infected area has completely dried.

The cold sore virus has been found in the saliva for as long as seven weeks after recovery from herpes in the mouth.

Responsibilities of child care providers and parents

Report the infection to the director.

Staff members with cold sores may need to be given duties involving less direct contact with children.

Advise the parent to keep the child away from babies aged under 2 months.

Controlling the spread of infection

Exclusion is not usually necessary. Anyone with a cold sore should not be in contact with babies aged less than 2 months. Exclude any adult or child who has contact with young babies until the sore has completely dried.

Follow **good handwashing** and cleaning procedures.

Do not allow kissing on or near the infected area or sharing of food or drink containers.

Dispose of used tissues correctly.

Treatment

The following ointments can be applied to cold sores to dry and clean them and to help prevent secondary infection. They are all available from chemists.

- Betadine paint. This is often used on cold sores. It contains iodine.
- Gentian violet. It also contains iodine.
- Stoxil. It contains idoxuride, which is used as an anti-viral herpes treatment.
- Alcohol, methylated spirits etc. These are cheap but may sting.
- Vitamin E (in oil form).

Erythema infectiosum (parvovirus B19, slapped cheek syndrome, fifth disease)

Description

This is a mild viral illness. Symptoms are fever, red cheeks, and an itchy, lace-like rash on the body and limbs. The person may also have a cough, sore throat or runny nose. Parvovirus is transmitted by droplets or by secretions from the nose and throat. Complications are rare. However, pregnant women and people with blood disorders or a depressed immune system should consult their doctor. Parvovirus causes miscarriage or still births in a small percentage of women infected during pregnancy. Malformations do not appear to occur in babies who survive this infection in the mother.

Incubation period

Approximately 1–2 weeks.

Infectious period

Not infectious once the rash appears.

Responsibilities of child care providers and parents

Report the infection to the director. All children with a rash and fever should be referred to a doctor.

Report outbreaks of two or more cases occurring within a few weeks to the local public health authority. Some health authorities will request that all cases be reported.

Controlling the spread of infection

Do not exclude people with parvovirus from the centre.

Follow **good handwashing** practices.

Clean and disinfect surfaces contaminated by respiratory secretions.

Treatment

No specific treatment.

Fleas

Description

Fleas are not choosy about where they live and feed. They infect both animals and humans, causing irritation and inflammation of the skin. Animals and humans often become abnormally sensitive to flea bites. Fleas are also capable of transmitting some tapeworms from dogs, cats, rats and mice to humans, but this is rare.

Incubation period

Effects of flea bites can be seen immediately. The skin will be irritated and inflamed. Other effects of flea infestation—such as tapeworm infection, hypersensitivity and dermatitis—will not be known till later.

Infectious period

Until the fleas and flea eggs (including those on animals and in the environment) are destroyed by treatment.

Responsibilities of child care providers and parents

Implement control measures against fleas.

Controlling the spread, and treatment

Treat animals, their bedding and their immediate environment (that is, areas where they usually rest) to destroy adult and immature fleas. Dispose of any debris and vacuum floor coverings thoroughly. Boil animal bedding or treat it with insecticides.

Treat animals with insecticidal preparations to kill fleas. Use any insecticide strictly according to the instructions on the label. If applying an insecticidal wash, wear rubber gloves and dilute the wash according to the instructions on the label. Avoid absorption of insecticide through the skin.

Treat animals with fleas for tapeworm, as fleas can transmit tapeworm infections.

If indoor areas are heavily infested with fleas, you may need to treat them. Further advice on methods of treatment can be obtained from local health authorities.

Hand, foot and mouth disease

Description

This is a viral illness. Symptoms are blisters, often seen in the mouth and on the hands and feet. Less commonly, blisters may be seen in the nappy area. It is not a serious illness and has nothing to do with animal diseases with similar names (foot and mouth disease in livestock, or paw and mouth disease in cats).

Children with hand, foot and mouth disease may have a low fever, be listless, feel off-colour and not eat well for a day or two. They may also complain of a sore mouth for a few days before the ulcers or blisters appear. Hand, foot and mouth disease is spread through contact with the fluid in the blisters. This is most likely to occur when it becomes airborne during coughing, talking, etc. and through contact with faeces.

Incubation period

Usually 3–7 days.

Infectious period

As long as there is fluid in the blisters. The faeces can remain infectious for several weeks.

Responsibilities of child care providers and parents

Report the illness to the director.

Controlling the spread of infection

Do not exclude children with hand, foot and mouth disease. This is because the virus is present in the faeces for many weeks.

Cover blisters on the hands and feet if possible.

Allow blisters to dry naturally. The blisters should not be deliberately pierced because the fluid within the blisters is infectious.

Follow **good handwashing** and cleaning techniques.

Treatment

Usually none is required. Use paracetamol for fever and any discomfort. Do not use aspirin where there is fever. The disease itself is not serious. However, if the child complains of severe headache, the fever persists, and the child is not getting well, the parents should consult their doctor immediately.

Headlice (pediculosis capitis)

Description

The head louse starts as a small egg about the size of a grain of salt which the female louse glues to the base of the hair shaft. Most often these eggs (nits) are found in the hair behind the ears, at the back of the neck, or around the crown and under the fringe. The eggs hatch in 7–10 days. They mature into an adult louse, which is a wingless insect 2–3 mm long with a flat body and six legs. The adult louse is capable of laying eggs after 10 days. Lice are very quick moving and very difficult to see in the hair.

Headlice generally cause itching behind the ears and at the back of the neck. They are spread by direct contact with the scalp of an infested person, or by contact with personal items (such as combs, brushes, hats, scarves, jackets, sweaters, sheets, pillows and pillowcases, blankets, upholstered furniture etc).

Lice are very host-specific. Those which live on animals will not live on humans and vice versa.

Incubation period

The eggs usually hatch in 7–10 days. Once hatched, the lice are capable of laying eggs in 10 days.

Infectious period

As long as the eggs or lice are alive. Lice do not survive more than two days away from a human host but their eggs may survive longer.

Responsibilities of child care providers and parents

Report the infestation to the director.

Be aware that children are likely to have close contact with each other. This will provide the opportunity for headlice to be transferred from head to head. Sharing of combs, brushes and head gear has been blamed for the transfer of lice, but this is probably far less significant than direct contact.

Examine the heads of children who scratch their heads a lot. Look for eggs (nits) or lice near the scalp. Lice are less than 3 mm long, translucent or tan in colour, and move. The eggs are greyish-white specks glued to the hair (within 6 mm of the scalp). Eggs that are more than 12 mm out from the base of the scalp are dead or are only empty egg casings. If live eggs are present, so are lice. Proper treatment will be necessary.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude a confirmed or suspected case from the centre.

Re-admit the child the day after appropriate treatment has started. Dead eggs may still be present but the child is no longer infested and nits need not be removed.

Inspect close contacts regularly for signs of infestation.

Headlice move away quickly as the hair is parted. Eggs will be easier to see as they will be firmly attached to the hair. If the eggs are more than about 10–15mm from the scalp they have either hatched or died. A good light and a magnifying lens will help you find and identify lice. Discarded skins and black sandy excrement may be seen on pillows and collars.

Educate the children, child care workers and parents about headlice and why personal items (like hats) should not be shared. The local health authority will help with this.

Dry clean clothing and bedding or launder them in hot water for a minimum of 20 minutes. This should be done both at the centre and at home.

Ironing clothes and drying clothes in a hot clothes dryer are also effective ways of killing lice.

Place all items that cannot be washed or dry cleaned in a plastic bag for 3–4 days.

Vacuum or gently iron carpet and furniture. Do not spray them with insecticide.

Wash and clean combs and brushes with detergent and hot water.

Treatment

Use of pediculicides (insecticides that kill lice)

Pregnant women, people with sensitive skin, and the parents of infants less than 12 months old should consult a doctor before applying pediculicides.

To prevent unnecessary or repeated exposure to pediculicides, the person applying the chemical should wear protective gloves.

Pediculicides are ideally applied twice, with the second application 7–10 days after the first. If the treatment is carried out correctly and still appears to be ineffective, then change the pediculicide to one that has a different insecticide base. Resistant headlice can be eradicated by switching to a different pediculicide.

Over the years a large number of different products have been used to treat headlice. Three pediculicides stand out as being most effective. These are maldison, pyrethrins and lindane. The following guidelines give information on each product and how to use it.

Maldison (CleenSheen, Ovanit Lotion, Head Lice Lotion, KP24)

This is recommended by the NHMRC as the first line of treatment. Maldison blocks the action of an enzyme in the nervous system of headlice. Because of differences between insects and humans in the enzyme on which it acts, maldison is far more toxic to insects than it is to humans. In humans, maldison is rapidly broken down and excreted. Nevertheless, as with any insecticide, it should be used only in accordance with the manufacturer's recommendations. Care should be taken to avoid contact with the eyes, nose and throat.

Never use garden strength maldison. Only use maldison preparations formulated for headlice control.

There are several maldison formulations for headlice treatment which have either a kerosene or an alcohol (ethanol) base. It is easier to use an alcohol-based preparation. When the treatment is applied to the hair, the alcohol will evaporate rapidly, leaving only a residue of maldison in the hair. Do not use a hair dryer, as heat may inactivate the residue. Follow the manufacturer's instructions carefully.

Pyrethrins (Lyban, Pyrifoam)

Pyrethrins are naturally occurring insecticides derived from chrysanthemum flowers. Pyrethrins act on

the louse's nervous system and as a stomach poison, killing headlice on contact. Despite their low toxicity to humans, some people are allergic to pyrethrins. Pyrethrins can also irritate the eyes, nose and throat. Contact with these parts of the body should be avoided.

Pyrethrin shampoo is applied to the hair, left for 10 minutes, then rinsed out. Hair should be dried gently with a towel. Do not use a hair dryer as the heat may inactivate the pediculicide.

Lindane (gammabenzene hexachloride) (Quellada)

Lindane is an insecticide which paralyses the nervous system of the headlouse. Lindane is more toxic than either pyrethrin or maldison. Therefore it is very important to use it strictly according to the manufacturer's instructions. It should not be applied to the scalp following a hot bath or shower and it should not be scrubbed into the scalp. Avoid contact with the eyes, nose and throat.

Small children, pregnant or breastfeeding women, and people with eczema or broken skin should not use lindane. However, lindane is safe and very effective if care is taken, and it is therefore a very useful pediculicide to have available alongside pyrethrin and maldison.

Lindane is available as a lotion containing 1% lindane. This is gently rubbed into the hair, allowed to remain for four minutes, and then thoroughly rinsed out. Lindane can be purchased only from pharmacies, under the brand name Quellada.

Comments

Lice may infest people of any socioeconomic position, age or sex. In fact, they may prefer clean hair. The closeness of children in child care centres increases the potential for spread.

Disclaimer

Use of trade names in this document is for identification purposes only and does not constitute endorsement.

Measles

Description

Measles is a highly infectious and serious viral illness. It begins with fever, tiredness, a cough, a runny nose and inflamed eyes. These symptoms usually worsen over three days. The cough tends to be worse at night. The child may avoid light because the eyes are inflamed. At this stage, there may be small white spots on a red base present in the mouth on the inside of the cheek. Between day 3 and 7, a rash begins at the hair line. In 24–48 hours, this has spread over the entire body. When the rash reaches the legs, the rash on the head and face begins to fade. The rash usually disappears after six days. Measles lasts about 10 days. The cough may be the last symptom to disappear. A child with measles usually feels very ill.

In a fairly high number of cases, the measles virus causes serious complications, such as pneumonia or inflammation of the brain. That is why there is much concern about the disease. Measles should not be regarded as a simple childhood disease.

Incubation period

8–14 days, usually 10 days.

Infectious period

About 4–5 days before the rash begins until the fourth day after the rash appears.

Responsibilities of child care providers and parents

Report the infection to the director.

Inform the local authority as soon as possible. (Note that one case of measles is considered an outbreak.)

Advise the parent to keep the child away from other children for at least four days after the rash appears.

Controlling the spread of infection

Exclude children with measles for at least four days after the onset of the rash.

Ask parents of all children to produce evidence of immunisation or certain proof of having had the disease. Children should be immunised at 12 months of age.

Unimmunised children under 1 year of age who have been exposed (or are likely to be exposed) to measles should be given normal immunoglobulin immediately. The antibodies in immunoglobulin may abort or modify the attack. These children should then be immunised with the measles vaccine at 12 months of age (but not within three months of having immunoglobulin because it may inactivate the vaccine). This will ensure continuous immunity.

Unimmunised children over 12 months of age should be given the MMR (measles–mumps–rubella) vaccine. This must be given within three days (72 hours) of exposure. The vaccine will protect children because antibodies develop more quickly to the vaccine than to the natural disease. Children who have received the vaccine within three days of exposure need not be excluded from the centre.

Unimmunised children over the age of 9 months may be given the MMR vaccine. These children will need to be re-immunised at age 15 months.

Exclude children who do not receive either the MMR vaccine or immunoglobulin from the centre until the outbreak is under control. This will be a minimum period of two weeks from the disease appearing in the last case.

Treatment

None.

Comments

Measles is best prevented through immunisation with the MMR (measles–mumps–rubella) vaccine. Children should be immunised twice against these diseases, at 12 months of age and between 10 and 16 years old. The vaccine gives lasting immunity.

Pet bites and scratches

Description

Animals may bite and scratch when defending property, territory or food. They may be feeling pain, fear or rage, or they may just be playing. The mouths and claws of animals contain bacteria that can cause bites and scratches to become infected. The infection is not spread from person to person. Rabies is not present in Australia and is therefore not a concern. It is possible to get tetanus from an animal bite.

Incubation period

Some animal bites and scratches may become visibly infected within a day. In other cases, it may take up to 10 days for an infection to become obvious.

Responsibilities of child care providers and parents

Supervise children while they are in contact with animals.

Have animals who are sick or in pain treated promptly. Irritable animals are more likely to bite or scratch.

Discourage children from playing with animals while the animals are eating.

Treatment

Animal bites and scratches, particularly puncture wounds, should not be dismissed lightly. They should be cleaned immediately and thoroughly with soap or antiseptic. More extensive bites and scratches, particularly deep puncture wounds, should be examined by a doctor in case further treatment is required.

Tetanus immunisation should be kept up to date. Children should receive a primary course of triple antigen (which includes tetanus) at 2 months, 4 months, 6 months and 18 months. A tetanus booster (CDT) is also necessary at 5 years of age (before starting school), at 15 years of age (ADT) and then every 10 years.

Ringworm (tinea)

Description

Ringworm is not actually a worm, but a spreading area of fungal dermatitis. Ringworm is passed on by direct skin contact or indirectly by touching contaminated articles, clothing and floors. While ringworm can be caught from animals, humans also have some species of ringworm that do not occur in animals at all. Different types of animals have different types of fungi that cause ringworm. If a specimen from the infected area is cultured in the laboratory, it is often possible to narrow down the source of infection to humans, cats and dogs, cattle, horses, pigs etc.

Ringworm can be found in different areas of the body (hair, skin and nails). The condition looks different depending where it is located—on the scalp, the nails, the body or the foot.

Ringworm of the skin (other than of the scalp, bearded areas and feet)

This appears as a flat, spreading, ring-shaped lesion. The outer edge is usually reddish. It often contains fluid or pus, but may also be dry and scaly or moist and crusted. The centre of the patch may appear to be healing.

Ringworm of the foot (commonly known as tinea or athlete's foot)

The characteristics of this common condition are scaling or cracking of the skin, especially between the toes, or blisters containing a thin watery fluid.

Ringworm of the nail

This condition tends to be a long-term fungal disease. It is difficult to treat. It usually affects one or more nails of the hands or feet. The nail gradually thickens and becomes discoloured and brittle. Cheesy looking material forms beneath the nail, or the nail becomes chalky and disintegrates.

Ringworm of the scalp and beard

This condition begins as a small pimple. It spreads outward leaving fine scaly patches of temporary baldness. Infected hairs become brittle and break off easily.

Incubation period

Varies with the site of infection. The incubation period for tinea is unknown.

Infectious period

As long as the condition persists.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child's towel separate from others.

Controlling the spread of infection

Exclude children with a fungal infection until the day after appropriate treatment has commenced.

Inspect close contacts regularly for signs of infection.

Make sure good handwashing and cleaning techniques are being practised.

Pets can be washed with anti-fungal washes.

Treatment

The condition first needs to be diagnosed correctly. It is treated by applying antifungal medications. These may need to be used for a long time if the nails are infected. Parents should seek medical advice.

Ringworm in animals can be treated with anti-fungal preparations and tablets. These can be obtained from veterinarians.

Roseola (exanthum subitum, sixth disease)

Description

This contagious viral infection is marked by the sudden onset of a high fever which lasts 3–5 days and then falls, at which time a rash appears. The rash may look similar to the measles rash, but appears first on the body. Although it can lead to febrile convulsions, roseola is usually a mild illness.

Incubation period

Around 10 days.

Infectious period

As the virus which causes this infection was only discovered recently, many aspects of the illness are uncertain. Saliva, nasal discharge and other respiratory secretions are most infectious from a few days before until several days after the rash appears.

Responsibilities of parents and service providers

Report the infection to the director.

All children with a rash and fever should see a doctor.

Report outbreaks of two or more cases occurring within a few weeks to the local health authority.

Control of spread

At present, it is not felt necessary to exclude children with roseola.

Follow good **handwashing**, cleaning and disinfection procedures.

Treatment

None.

Rubella (german measles)

Description

Rubella is a mild viral disease. Symptoms include fever and a general body rash. The first sign of this illness may be swollen glands, usually at the back of the skull and behind the ears. This is followed by a rash. The rash usually consists of pink isolated spots. These appear first on the face, then spread rapidly to the trunk, upper arms and upper legs. The rash fades rapidly and is usually gone within three days. Rubella is spread through airborne droplets or direct contact with the nose or throat secretions of infected persons. Rubella usually causes only mild illness in children. However, infants born to mothers who had rubella during pregnancy may have severe birth defects. The risk is highest in early pregnancy.

Incubation period

14–21 days, usually 17 days.

Infectious period

Up to seven days before and four days after appearance of the rash.

Responsibilities of child care providers and parents

Report the infection to the director.

Refer anyone with suspected rubella to a doctor.

Pregnant staff members should be aware of their immune status because of the risk they run while working as child care providers.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

The affected child should remain away from the centre for at least four days after onset of the rash and until fully recovered.

Treatment

Immunisation after exposure will not necessarily prevent infection or illness. Pregnant women should not receive the rubella vaccine.

Comments

Children should be immunised twice against rubella, at 12 months of age and again at between 10 and16 years of age. The rubella vaccine is part of the MMR (measles–mumps–rubella) immunisation. All girls aged 10 years and over receive the immunisation at school.

Anyone who works with children should be immunised or be certain that they have had a serological blood test which demonstrates that they are immune to rubella.

Scabies and other mites causing skin disease

Description

This is an infectious disease of the skin caused by a mite. Scabies and other mites causing skin disease are diagnosed by examining a skin scraping under a microscope for mites or eggs. Scabies and other mites usually cause intense itching. Scabies is usually found between the fingers, on the front of the wrists, and in the folds of the elbows, wrists, armpits, buttocks and genitalia. Thread-like 'tunnels' (about 10 mm long) may be present in the skin, but these are often very difficult to identify. When mites have been transmitted from animals to humans, the mites are commonly found on contact areas, such as the arms, chest and neck.

Scabies is usually transmitted by skin to skin contact. Very rarely, it is spread on underclothing or bed clothes that have been freshly contaminated by an infested person. The mites only live for a few days off the human or animal body. Although scabies mites from animals can live on humans, they do not reproduce in the skin.

Some forms of skin disease in animals caused by mites (such as mange) can also be spread to humans. If an animal has mange, it is important to have a veterinarian diagnose which mite is causing the mange. Some mange mites on animals can spread to humans (for example, scabies and cheyletiella), while others do not spread to humans (for example, demodex). Sarcoptes (which causes scabies) can infect a wide variety of animals (including cats and dogs), while cheyletiella usually infects rabbits but can also infect cats and dogs.

Incubation period

Itching begins 2–6 weeks after infestation in people not previously exposed to scabies and within 1–4 days in cases of re-infestation. Itching due to cheyletiella can develop within hours of handling the animal.

Infectious period

Until the mites and eggs are destroyed by treatment.

Responsibilities of child care providers and parents

Report mite infestations to the director.

Any animals in the child care facility should be examined for mange and treated with insecticidal washes if infection is found.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude people with mites from the centre until the day after treatment begins.

Inspect close contacts regularly for signs of infestation.

Wash contaminated undergarments and other clothing worn by the child with hot water and detergent. Also wash bed linen and any other items the child has used in the past two days. Place all items which cannot be washed or dry cleaned in a plastic bag for four days to kill any mites or eggs.

Bed mattresses and upholstered furniture can be vacuumed or gently ironed.

Treatment

Skin disease caused by mites can easily be confused with other skin diseases. Treatment should not begin until a doctor has confirmed the diagnosis following examination of a skin scraping for mites. This is particularly important for babies, pregnant women or people who already have other forms of skin disease. Treatment involves application of insecticidal cream, lotion or solution as prescribed by a doctor. If the mite has spread within the centre, all staff and children will need to be treated at the same time.

Animals with skin disease caused by mites (mange) should be treated. A vet should examine a skin scraping to confirm the presence of mites and identify whether the mite can spread to humans. Animals and their bedding should then be treated with insecticidal washes, according to the vet's instructions.

Comments

Scabies is not an indication of poor cleanliness. A diagnosis of scabies should be considered in staff and children who have a long-standing itchy disorder. By the time it is diagnosed, many people may have been infested. All those who have had close skin-to-skin contact with the child (for example, family and close playmates) should be treated simultaneously. Otherwise treatment is likely to be unsuccessful.

Scarlet fever

Description

Scarlet fever begins suddenly, sometimes causing a convulsion in very young children. As a rule it begins with a sore throat, high temperature and frequent vomiting. This is followed within 12–36 hours by a rash. This appears first on the neck and chest, then rapidly spreads over the body, finally reaching the legs. The child may have a strawberry coloured, textured tongue. Scarlet fever is caused by a streptococcal infection (see strep throat on page 50).

Incubation period

Usually 1–3 days.

Infectious period

Only for about 24 hours after appropriate treatment begins. Untreated people remain infectious as long as they are sick. This is usually 3–7 days.

Responsibilities of child care providers and parents

Report the infection to the director.

Report more than one case to the local health authority. Public health workers may be able to help control the spread of the illness.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude the child from the centre until they have taken antibiotics for at least 24 hours and the symptoms have improved significantly.

Routine screening of all children and employees at the centre is not necessary, unless the local health authority determines that there is an ongoing epidemic or unless a streptococcal kidney disease has occurred.

Follow good personal cleanliness practices. Cover the nose and mouth when coughing or sneezing. Dispose of tissues used to wipe a runny nose. Always follow this with proper handwashing. Do not share eating utensils, food or drinking cups. Disinfect toys that infants and toddlers put in their mouths.

Treatment

Penicillin or other effective antibiotics as prescribed by a doctor. To prevent potential complications such as rheumatic fever, antibiotics should be continued for 10 days. Calamine lotion may be helpful in relieving discomfort from the rash.

School sores (impetigo)

Description

Impetigo is a bacterial skin infection caused by the staph organism, the strep organism, or both. This infection spreads easily to other parts of the infected person's body. It is transferred to other people by direct contact with sores or contaminated clothes. Dry, cracked skin serves as an area for growth of bacteria. Impetigo appears as a flat, yellow, crusty or moist patch on the skin.

Incubation period

1–3 days.

Infectious period

As long as there is discharge from the sores.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude the child until treatment has commenced. Sores on exposed surfaces should be covered with a watertight dressing.

Keep a child with impetigo clean. The infected area should be washed with mild soap and water. The child's clothes, linen and towels should be changed at least once a day.

Emphasise the importance of **good handwashing** procedures for all personnel and children in the centre.

Treatment

The doctor may recommend the use of antibiotic ointment or antibiotics taken by mouth. Refer the child back to the doctor if the condition does not improve.

Thrush (candida)

Description

Thrush, also known as monilia or candida albicans, is a fungus that infects the top layers of the skin or mucous membranes. The fungus that causes thrush is part of the normal human flora. Usually it lives harmoniously on and in the body. For various reasons, the fungus can multiply to such a degree in some people that it can cause symptoms that require medical treatment. Often this is when the person is feeling rundown or taking antibiotics.

Thrush is common in very young babies and infants. They are susceptible at this time because their immune systems are still immature. Thrush is often found inside the mouth as white spots or flakes that cannot be removed by cleaning the mouth. Another site of infection is the vulva and vagina. Frequently thrush is a secondary infection to nappy rash. Thrush is spread by direct contact with fungi living in the mouth, vagina and faeces and on the skin. A mother can infect her newborn baby during the birth.

Incubation period

Variable, but 2–5 days in infants.

Infectious period

As long as the white spots or flakes are present.

Responsibilities of child care providers and parents

Report the infection to the director.

Controlling the spread of infection

Do not exclude babies and children with thrush.

Make sure **good handwashing** and cleaning procedures are being practised.

Treatment

For moderate to severe infection of the mouth or the vulva/vagina the parent should take the child to a doctor. The doctor may prescribe anti-fungal medications. Wash the affected area with water, apply the prescribed cream, and expose the nappy area to air as much as possible.

Warts (common, plane and plantar)

Description

Warts are caused by a papova virus infection of the skin. **Common warts** develop on the skin of children and adolescents. They mainly occur on the knuckles, backs of hands and knees. Occasionally, common warts come out in a crop. **Plane warts** are flat-topped. They are most commonly found on the face and on the back of the hands. **Plantar warts** occur on the soles of the feet. They are found mostly in older children and adolescents.

Incubation period

About four months, but ranges from 1–20 months.

Responsibilities of child care providers and parents

Report the infection to the director.

Infectious period

Unknown, but if untreated probably as long as warts can be seen.

Controlling the spread of infection

Do not exclude a child with warts.

Treat warts if the affected area is exposed (for example, on the hands or legs). After treatment the warts are not contagious.

The wart virus may enter via moist skin surfaces, such as abrasions and cuts. Therefore it is important to get children to:

- dry hands well after washing them
- cover abrasions and cuts with bandaids or a clean dressing
- wear shoes to protect the feet.

Make sure that **good handwashing** and cleaning procedures are being practised.

Treatment

Warts will usually go away naturally, but this may take a long time. If treatment is necessary liquid nitrogen may be used. This is applied directly to the wart by a doctor. It freezes the warts, which usually disappear after several treatments. Alternatively, the doctor may choose to scrape warts or cut them out.

Other complaints

Conjunctivitis

Description

Conjunctivitis is an irritation or infection of the eye caused by bacteria, viruses, chemicals or allergies. Symptoms include a scratchy feeling in one or both eyes and redness in the whites of the eyes. A discharge may be present, causing the eyelids to stick together in the morning. Sensitivity to light is another common symptom. Diagnosis of the source of infection or irritation can be made by examining a smear of the discharge from the eye under a microscope or by culturing the virus or bacteria. This is often not done and so usually the cause is unknown. Viral and bacterial conjunctivitis can be spread by direct contact with secretions from the eye. This type of infection may also be spread indirectly through towels, washcloths, handkerchiefs and other objects that have been contaminated with eye secretions.

Incubation period

24–72 hours.

Infectious period

During the entire course of an active bacterial or viral infection, or in the case of a bacterial infection three days after beginning antibiotic treatment. Conjunctivitis caused by chemicals or allergies is not infectious.

Responsibilities of child care providers and parents

Inform the director and the parents of the child.

Since bacterial and viral conjunctivitis look the same, the child should see a doctor for proper diagnosis and treatment. Any child in the centre showing signs of conjunctivitis should be isolated from the other children until the source of the irritation can be confirmed.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude while there is discharge from the eye.

Treatment

Medication may be prescribed by a doctor. This is usually antibiotic eye drops.

Cytomegalovirus (CMV)

Description

Cytomegalovirus is a member of the herpes virus group. Most CMV infections cause either no symptoms or only mild symptoms. The virus is spread by close contact with infectious body secretions (saliva, urine, breastmilk, tears, blood, cervical secretions and semen) which enter through mucous membranes (eyes, mouths and genitals) and cuts in the skin. Infection of infants can also occur before birth, at birth, or early in life.

Most women (50–60%) have been infected with CMV in the past and cannot be infected with the virus again. However, women who are infected with CMV for the first time while pregnant may infect the unborn baby. Infection of the unborn baby occasionally leads to eye disease, deafness, developmental delay or death. Therefore, pregnant women who are caring for young children need to be particularly careful.

Incubation period

Not accurately known. Probably 3–12 weeks.

Infectious period

For as long as the virus is shed in body secretions (usually a few weeks), but occasionally longer or intermittently thereafter.

Responsibilities of child care providers and parents

Report the infection to the director. The director may then need to review with staff the need for good personal cleanliness.

Controlling the spread of infection

It is common for children under the age of 5 to shed CMV in urine and saliva. It is not necessary to exclude these children from the centre.

Women of child bearing age working with young children should always practise good personal cleanliness, especially:

good handwashing after contact with body secretions, and especially after changing nappies or assisting in toilet care

not kissing infants on the mouth (hugging is acceptable).

Treatment

Usually none is required.

Comments

Women planning pregnancy need to inform their doctor that they work with young children. For more information, see section on occupational risks for child care workers on page 37.

Haemophilus influenzae type b (Hib)

Description

Although uncommon, this infection is the most frequent cause of life-threatening infection in children under 5 years of age. It may cause meningitis (infection of the brain linings), epiglottitis (swelling of part of the throat, which obstructs breathing), pneumonia, joint infection or cellulitis (infection of the tissue under the skin). Symptoms of meningitis include fever, vomiting, headache, irritability, fitting and neck stiffness. Neck stiffness may be hard to identify.

The bacteria live in the throat. They are spread in respiratory secretions by direct person-to-person contact (for example, kissing), and by hands, mouthed toys etc.

Incubation period

2–4 days.

Infectious period

Hib is infectious as long as there are organisms present in the nose and throat.

Responsibilities of child care providers and parents

Any child with the above symptoms should be seen by a doctor immediately.

The director should inform and seek help from the local public health unit.

The infected child must be excluded until a medical practitioner confirms that the child may return. The child must not return until a course of the antibiotic rifampicin is completed.

Controlling the spread of infection

If appropriate, public health authorities may arrange for other children and staff to be given courses of the antibiotic rifampicin by mouth and/or arrange vaccination.

Adults may also be given the antibiotic. They are not at risk of disease but may be carrying the germ in their throat.

All children entering child care should receive vaccination against Hib.

Treatment

A special antibiotic (rifampicin) may be given to kill organisms present in the nose and throat. This antibiotic is not the same as those used to treat the child's infection; it is an extra antibiotic given to prevent spread of the disease.

A child with Hib will be treated in hospital with antibiotics.

Comments

Vaccination against Haemophilus influenzae type b is recommended for all children.

Hepatitis A (infectious hepatitis)

Description

Hepatitis A is an inflammation of the liver caused by a virus. Recent hepatitis A infection can be diagnosed by doing a blood test called 'anti-hepatitis A IGM'. Symptoms, when present, may include abdominal discomfort, loss of appetite, nausea, low-grade fever and tiredness, sometimes followed by yellow skin and eyes, dark urine and pale faeces. Older children and adults are much more likely to have symptoms than younger children. In mild cases, these last 1–2 weeks. In severe cases, they may last up to several months. Children under age 3 rarely have symptoms. However, they frequently spread the infection through organisms living in microscopic amounts of faeces on their hands. These contaminate objects or food. The virus is then taken in by mouth. Urine, too, can be responsible for transmission.

Incubation period

15–50 days, usually 3–5 weeks.

Infectious period

A person is most infectious in the two weeks before yellowing (jaundice) occurs, and then slightly infectious during the first week of having jaundice.

Responsibilities of child care providers and parents

Report the infection to the director. The first sign of a hepatitis A outbreak is likely to be an ill parent or employee, not an ill child.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude the ill child or employee for one week (seven days) after the onset of jaundice or illness.

It is important for the infected person to consult their doctor. The doctor may offer immunoglobulin to all intimate household contacts of the infected person. If given 7–10 days after exposure, immunoglobulin may prevent hepatitis A or lessen the severity of the symptoms.

Make sure that **good handwashing** and cleaning procedures are being followed in the centre and at home.

Treatment

There is no treatment for hepatitis A once symptoms develop. The illness will stop as the body fights off the virus. Immunoglobulin, as mentioned above, may prevent or lessen symptoms in contacts if given soon after exposure. Immunoglobulin works by enhancing the body's immune response.

A vaccine for hepatitis A is now available in Australia. The vaccine is recommended for child care workers who care for children under 2 years of age.

Hepatitis B

Description

Hepatitis B is an infection of the liver caused by the hepatitis B virus. The virus is found mainly in the blood of an infected person, and to a lesser extent in some other body fluids (for example, semen). Saliva is not thought to play a big part in transmission. Hepatitis B is more common in adults than in children and is not normally a problem in child care facilities. Frequently, this virus is carried without symptoms.

Women who have this disease during pregnancy may transmit it to their newborn babies. Many of these babies become long-term carriers of the virus. The disease usually spreads when infected blood enters the body through a cut or abrasion or through a mucous membrane (such as the lining of the mouth).

Symptoms, if present, may include abdominal discomfort, loss of appetite, nausea, fever, tiredness, joint pain, dark urine and yellow skin or eyes (jaundice).

Incubation period

2–6 months.

Infectious period

For from about one month before jaundice occurs to about 1–3 months after jaundice occurs. Some people may carry the virus for life.

Responsibilities of child care providers and parents

Report the infection or carrier status to the director.

Inform the local health authority of an active case.

Controlling the spread of infection

Exclusion is not necessary.

A child who feels unwell may need to stay away.

It is not necessary to exclude a long-term carrier from child care. However, staff need to be aware of potential hazards and precautions.

Take precautions when handling blood-contaminated items. More information on this subject is given on pages 18–19.

Re-emphasise good handwashing, cleaning and disinfecting practices.

Prevent scratching, biting, and violent or aggressive behaviour.

Cover any open sores, cuts or abrasions that are weeping or moist.

If a potentially infectious event occurs (for example, a bite from a hepatitis B carrier child that breaks the skin or a spread of blood from a carrier child), then contact the local public health unit immediately. Immediate preventive treatment may be given to the child or adult in contact with the carrier child.

Treatment

None. Preventive treatment is usually given only to intimate contacts or to people who have been involved in an incident where infected fluids may have contaminated wounds or cuts. Hepatitis B vaccine is available. It has been used to protect people at high risk of hepatitis B, such as dentists and surgeons.

Hepatitis C

Description

Hepatitis C is also an infection of the liver, caused by the hepatitis C virus. The virus is found primarily in the blood of an infected person. Transmission of hepatitis C is predominantly through contact with contaminated blood. People at risk include, for example, intravenous drug users sharing contaminated syringes, and haemophiliacs or other people who received a blood transfusion before screening tests were available. Saliva is not thought to play a large part in transmission. About 20–50% of people with acute infection progress to long-term liver disease.

Symptoms of hepatitis C may include abdominal discomfort, loss of appetite, nausea, fever, tiredness, joint pain, dark urine, and yellow skin or eyes (jaundice). The virus may be carried without symptoms.

Incubation period

6–8 weeks.

Infectious period

Indefinitely.

Responsibilities of child care providers and parents

Report the infection or carrier status to the director.

Inform the local health authority of an active case.

Controlling the spread of infection

Exclusion is not necessary.

A child who is unwell may need to stay away.

Take precautions when handling blood-contaminated items. More information on this subject is given on pages 18–19.

Re-emphasise **good handwashing**, cleaning and disinfecting practices.

Prevent scratching, biting, and violent or aggressive behaviour.

Cover any open sores, cuts or abrasions that are weeping or moist.

If a potentially infectious event occurs (for example, a bite from a hepatitis C carrier child that breaks the skin or a spread of blood from a carrier child), then contact the local public health unit.

Treatment

None.

HIV, AIDS (Human immuno-deficiency virus)

Description

HIV is a virus carried in blood and body fluids. It damages the immune system of the person infected to the extent that the person becomes susceptible to a variety of common and rare diseases. HIV infection is called AIDS when it becomes fully developed in the body. People with AIDS contract repeated infections with unusual organisms and cancers that do not normally affect people with healthy immune systems.

Transmission

How HIV is spread and how HIV is not spread

- Sexual intercourse (anal or vaginal) with an infected person.
- Sharing of infected needles and syringes.
- Infected mother to child just before or during birth, or through breastmilk. Between 25% and 50% of children born to infected mothers will themselves become infected due to transmission of HIV before, during, or soon after birth. In a small number of cases, the disease is transmitted to the child through the mother's breastmilk.
- Penetration of the skin by infected blood.
- **There is no evidence that HIV is spread from child to child in schools or child care centres through normal social contact.**
- HIV is not transmitted through air or water, the sharing of plates, cups or cutlery, swimming pools or toilets, kissing, coughing, sneezing or spitting. There is no evidence that HIV can be spread by mosquitoes or other biting insects, as the virus dies rapidly outside the human body.

Incubation period

The disease may not be evident for months or even years after HIV infection. In adults, a glandular fever-like illness occurs a month or so after infection in about 50% of people. HIV infection develops into AIDS within 10 years in at least 40–50% of infected people.

Infectious period

People become infectious about 2–4 weeks after picking up the HIV virus. A blood test for antibodies to the virus will show whether a person has been in contact with and become infected by the HIV virus.

It seems likely that HIV infection may be lifelong, and that people infected with HIV will always be potentially infectious. However, the spread of the infection to others requires special and unusual conditions. To date, there have been no reported cases of infection with the virus through ordinary social contact, through involvement with schools, pre-schools or child care centres, or through ordinary non-sexual family contact.

Responsibilities of child care providers and parents

At all times and in all situations, the confidentiality or privacy of medical information about an infected child should be observed. The number of people aware of an infected child's condition should be kept to the minimum needed to ensure proper care of the child and to detect situations where there is potential for transmission.

Following medical advice, it can be expected that parents would consult with child care providers if their child has HIV infection. Such children are more likely to have severe infections than others, and more consideration and care must be given to their immunisation with common vaccines.

Controlling the spread of infection

We recommend that children who have been infected with the HIV virus and who are apparently healthy **do not need to be excluded** from the child care centre, provided normally acceptable levels of cleanliness and supervision are maintained.

Children who are unwell should be assessed by their doctor before any decision is made about whether they should stay away from school until better.

Children who have moist skin lesions or abrasions should cover those lesions while at school. The covering should be waterproof (so that body fluids cannot leak) and they should be securely attached. If lesions are weeping or discharging and cannot be covered, then as a precaution the children should remain away from school until their lesions have healed or can be covered.

Children who have significant behavioural disturbances may need to be excluded from school depending on advice from the child's doctor in consultation with public health staff, the child's parents or guardians, and child care or educational staff.

Children who have developed impairment of immunity should remain away from school during outbreaks of serious contagious diseases such as measles or chicken pox. Children with HIV are more susceptible to such infections.

In schools, pre-schools and child care centres and in ordinary social contact, there is no need to segregate items used regularly by all children, such as eating utensils, plates and cups. Washing them in warm soapy water is all that is required. The usual cleaning techniques are sufficient for toileting and washing facilities.

Care should be taken when exposure to blood or body fluids of any type occurs. Refer to the section on dealing with blood and body fluids on pages 18–19.

In the unlikely event of having to resuscitate a child infected with HIV, take simple precautions if time and facilities allow. These include the use of mechanical ventilators and disposable or sterilisable mouth-to-mouth masks, if available. The risk of infection through direct mouth-to-mouth contact is extremely low. Never withhold resuscitation. All centres caring for children should ensure that they have a well-equipped first aid kit and know how to use it effectively.

Personnel policies

Child care workers and staff members who are infected with HIV (or who think they might be) do not have to inform their employer that they have HIV. However, they do have a duty to act in a responsible manner towards others.

In view of the potential for these people to become ill with AIDS, they should seek medical assistance in monitoring their own health. They should also be particularly aware of the dangers to others of accidental transmission of the disease. They must prevent their blood and body fluids coming into physical contact with others.

The symptoms and effects of the disease are such that staff may be unable to continue work or may require intermittent sick leave. As in the case of other illnesses, the employer should ensure that the staff member is acquainted with sick leave entitlements.

Treatment

For patients with clinical AIDS, medical practitioners use specific drugs (for example, antibiotics and anti-viral drugs) to overcome secondary infections associated with the disease. Drugs that interfere with the replication of HIV are available. These drugs do not cure AIDS.

An enormous worldwide effort is being made to educate people about AIDS, to reduce the spread of HIV, to search for new anti-viral drugs effective against HIV, and to develop a vaccine. Australian authorities are monitoring these developments closely.

Further information

The information in this section has been drawn from several publications:

'Paediatric AIDS' in *AIDS Task Force Bulletin* 3/86

'Children and AIDS' in *AIDS Task Force Bulletin* 4/86

Facts about AIDS in Australian National Council on AIDS (ANCA) Bulletin No. 1

HIV/AIDS and the Workplace: Information for Health Workers and Others at Risk in Worksafe Australia booklet

Meningitis

Description

Meningitis is an inflammation of the covering of the spinal cord. Meningitis may be caused by bacteria or viruses. Bacterial meningitis is usually a more severe infection than viral meningitis. Two bacteria cause most of the bacterial meningitis in childhood. They are Haemophilus influenzae type b and Neiserria meningitidis (meningococci). Meningitis is diagnosed by lumbar puncture. This involves taking a sample of fluid from the spine.

Symptoms may include fever, loss of appetite, vomiting, stiff neck and irritability. Older children may experience irritability, confusion, drowsiness, stupor or coma. Younger children and infants may have a high-pitched cry, a bulging of the soft spot on the top of the head (the anterior fontanelle) and convulsions. Often an infected child has recently had a cold or ear infection. The disease is spread through direct contact with droplets and discharges from the nose and throat. It usually requires several hours of contact with an infected person to become infected with the bacteria. Children can become severely ill with meningitis very quickly.

Incubation period

Short, usually less than one week.

Infectious period

As long as bacteria are present in the nose and throat. In the case of viral meningitis, as long as the virus is present in the stools.

Responsibilities of child care providers and parents

Child care workers should inform the parents immediately if their child has symptoms. Parents should then seek medical help.

The director will need to find out what preventive measures need to be taken for the particular germ involved.

Inform the local health authority. Health authority workers will assess the need for vaccination and for preventive antibiotic treatment of contacts. They will also be able to provide information about the illness to parents and staff. Parents of contacts should be notified that their child has been exposed. Parents need to know what signs of illness to look for in their child.

Controlling the spread of infection

A child with bacterial meningitis is usually hospitalised. The child may return to the centre after being treated with antibiotics and when the doctor feels that the child is well and non-infectious.

Make sure **good handwashing** procedures are being followed.

Treatment

A child with meningitis will probably be hospitalised. If the infection is bacterial, the child will be treated with antibiotics.

Meningococcal infection

Description

This is a rare bacterial infection. It can cause life-threatening illness at any age, but is particularly dangerous for young children. The bacteria live in the throat. They are spread in respiratory secretions by direct person-to-person contact (for example, kissing), and indirectly on hands or on mouthed toys or objects. Meningococcal infection may cause meningitis or septicaemia (blood stream infection). Symptoms of meningitis include fever, vomiting, headache, irritability, fitting and neck stiffness (see meningitis, page 101). Symptoms of septicaemia include high fever and rash.

Incubation period

3–4 days.

Infectious period

The child is infectious as long as organisms are present in the nose and throat.

Responsibilities of parents and service providers

A child with this infection should see a doctor immediately. The director should inform and seek help from the local public health unit.

Controlling the spread of infection

If appropriate, public health authorities will arrange for other children and staff to be given a course of rifampicin by mouth and/or arrange vaccination.

Treatment

A special antibiotic (rifampicin) may be given to kill organisms present in the nose and throat. This antibiotic is not the same as those used to treat the child's infection; it is an extra antibiotic given to prevent spread of the disease.

A child with meningococcal infection will be treated in hospital with antibiotics.

Mumps

Description

Mumps is caused by a virus. Symptoms, when present, include swelling of one or more of the salivary glands, high fever and headache. About 30% of people with mumps will have only mild symptoms or no symptoms at all. In males, tenderness in the testicles may occur. Females may have some lower abdominal pain. Complications can occur, including inflammation of the spinal cord and brain, hearing loss, sterility (very rare) or death (extremely rare). Spread is by direct contact with droplets from the sneeze or cough of an infected person.

Incubation period

12–25 days, usually 16–18 days.

Infectious period

Up to six days before swelling of the glands begins and up to nine days after the onset of swelling.

Responsibilities of child care providers and parents

Report the infection to the director.

Advise the parent to keep the child away from other children for the period of exclusion.

Controlling the spread of infection

Exclude the child from the centre for nine days after onset of swelling.

Treatment

None.

Comments

Children should be immunised against mumps at 12 months of age and again at 10–16 years with the measles–mumps–rubella (MMR) vaccine. The vaccine provides long-term immunity. Illness provides lifelong immunity.

Toxoplasmosis

Description

Toxoplasmosis is a protozoan infection. It is contracted by eating raw or undercooked meat, or through contact with cat faeces. Apart from transmission from mother to unborn child, person-to-person spread does not occur. Toxoplasmosis in pregnant women can affect the unborn child. It may cause rashes, damage to the child's nervous system, liver or other organs or, rarely, death. Usually, though, the newborn baby is not affected at all. In Australia, very few cases of affected newborn children have occurred.

Toxoplasmosis acquired after birth usually results in either no symptoms or mild illness. When mild illness occurs, common symptoms are enlarged lymph nodes, muscle pain, intermittent fever and generally feeling ill. Toxoplasmosis infection is confirmed by a doctor's examination and blood tests. No immunisation is available.

Incubation period

Uncertain, but probably from several days to months.

Infectious period

Infected meat is not safe until cooked properly. Freezing meat does not necessarily make it safe.

Cat faeces containing toxoplasma can become infectious 24 hours after being passed.

Responsibilities of child care providers and parents

Report a diagnosed case to the director.

Controlling the spread of infection

As person-to-person spread does not occur, do not exclude infected children or adults.

Cook meat adequately. Hands, knives and other kitchen utensils should be thoroughly washed after being in contact with raw meat.

Dispose of cat faeces and litter daily (as it can become infectious after 24 hours). Wear gloves when handling cat faeces or litter trays. Disinfect litter trays daily by scalding with boiling water.

Pregnant women without antibodies to toxoplasma should avoid cleaning litter trays and avoid contact with cats of unknown feeding history.

Cover children's sandpits when not in use and keep stray cats away from the sandpit.

Feed cats dry, canned or boiled food. Discouraged them from hunting and scavenging.

Treatment

Medication is available for significant infections. In most people, infection passes unnoticed.

Comments

It is important for pregnant women to avoid infection as it may seriously affect the unborn child. (Infections acquired after birth can be treated using medication prescribed by a doctor.) Pregnant women should avoid cleaning litter trays or contact with cats (particularly if the feeding history of the cat is unknown). To avoid contact with cat faeces when gardening, wear gloves and **wash hands afterwards**. These precautions can be relaxed if the woman is known to be immune to toxoplasmosis infection.

Glossary of terms

Bacteria	A group of small micro-organisms (larger than viruses) that live in the soil, plants and animals as well as in the body. Not all bacteria are harmful, although some may cause illness or produce a poison known as a toxin.
Carrier	A person who harbours a specific infectious agent (virus, bacteria, parasite etc.) and who appears quite well but has the potential to infect others. The person's condition is known as a 'carrier state' and may last for a short or a long time.
Cleaning	Removing infectious agents and organic matter from surfaces. Cleaning may be done by washing or scrubbing with hot water and soap or detergent or by vacuum cleaning.
Contagious disease	A disease that can be passed from one person to another. It is the same as an infectious disease.
Contagious period	The length of time during which a person can pass an infection to another person.
Disinfection	Killing infectious agents that are outside the body by chemical or physical means.
Endemic	A disease or infectious agent present in a community or region at all times.
Epidemic	An illness or disease which attacks many people in a community or region at the same time. It may spread rapidly over a wide area.
Germ	A micro-organism that may cause disease.
Immune individual	A person who is highly resistant to a disease. A person becomes immune as a result of immunisation or a previous infection.
Immunisation	The process of making a person immune by oral or injected vaccination.
Immunity	Resistance to an infection. A person acquires immunity after having an infection or being immunised. The person's body can then recognise and destroy the micro-organisms that cause that infection or immunisable disease.
Immuno-globulins	Proteins which protect the body against infectious micro-organisms. They do this by carrying antibodies that can kill the invading organisms. Immunoglobulins can be injected to give immediate protection against diseases such as infectious hepatitis, tetanus, measles etc. This protection is temporary.
Incubation	The time between an infectious agent entering a person's body and the appearance of a symptom of the disease. Incubation periods may range from a few hours to several years depending on the disease.
Infection	The entry and development or multiplication of an infectious agent in the body of a human being or animal. In many cases, infection can occur without leading to illness or infectious disease.
Infectious agent	An organism (virus, bacteria, fungus, protozoa or parasitic worm) that is capable of producing infection or infectious disease.

Infectious disease	A disease that is caused by an infectious agent or that can be passed on (transmitted) by an infectious agent. It may affect humans and/or animals.
Infectious period	The length of time a person who is infectious can pass the infection on to others.
Protozoa	Microscopic organisms. Some are parasites which can cause infections such as giardiasis and toxoplasmosis.
Quaternary disinfectants (quats)	A group of quaternary ammonium compounds which are effective as general purpose disinfectants. They also have a detergent action.
Vaccination	The process of giving a vaccine to produce immunity or protection against a disease. Today it means the same as immunisation.
Vaccine	Vaccines cause resistance to specific infections. They may contain live or dead organisms, or parts or products of organisms.
Virus	A group of infectious agents that are much smaller than bacteria. They can only multiply in living cells. They are responsible for some of the most important diseases affecting human beings, for example, most childhood illnesses with rashes, such as measles, chicken pox and rubella.

Further reading

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Cows Milk Intolerance in Children (1983), pamphlet	CH 4
Fluid Replacement in Children with Gastroenteritis (1991), pamphlet	CH 29
Food Allergies in Children (update, October 1991), 3 pages	CH 8
Health Effects of Lead in Children (November 1987), (revised press statement of June 1984), pamphlet	CH 10
Health Needs of Preschool Children in Day-care (June 1988), 5 pages	CH 12
Infant Colic: Current Concepts in Aetiology and Management (November 1990), pamphlet	CH 26
Risk Factors Associated with Sudden Infant Death Syndrome (SIDS) (October 1991), pamphlet	CH 27
Screening and the Health Care of Children (1984), pamphlet	CH 17
Television and Your Family (November 1987), 6-page pamphlet	CH 23
The Effects of Family Break-up on Children (November 1988) 10-page pamphlet	CH 19
Australian Immunisation Procedures Handbook (5th edition, 1994), 128 pages	CD 3
Listeria—Special Dietary Advice (including pregnant women) (June 1992), 3 pages	CD 15
Alcohol Use in Paediatric Preparations (November 1990), 8 pages	CH 25
Caffeine, Kola Drinks and Children—Information Bulletin (June 1988), 6 pages	N 17
Dietary Guidelines for Australians (revised June 1992), 11 pages	N 4
Guidelines to Promote Breast-feeding and Implement WHO International Code of Marketing Breast Milk Substitutes (1984), 7 pages	N 2
Nutrition Education in Schools (June 1989), 24 pages	N 11

CH = Child Health; CD = Communicable Diseases; N = Nutrition

Please contact:

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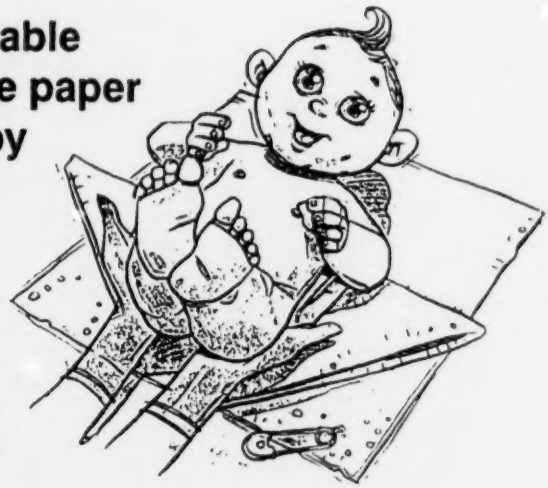
Fax : (06) 289 6957

A list of all NHMRC publications is available on request.

- ✔ Place paper on the change table
- ✔ Put the child's bottom on the paper
- ✔ Wear gloves for a dirty nappy
- ✔ Remove the child's nappy and clothes
- ✔ Clean the child's bottom
- ✔ Remove the paper
- ✔ Remove gloves by peeling them back from your wrists



Changing nappies without spreading germs

- ✔ Dress the child
- ✔ Wash the child's hands
- ✔ Take the child away from the change table
- ✔ Clean the change table well
- ✔ Wash your hands

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NHMRC National Health and Medical Research Council
COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH
Childcare

When to wash your hands - adults and children

- ✔ On arrival
- ✔ Before handling food
- ✔ Before eating
- ✔ After changing a nappy
- ✔ After going to the toilet
- ✔ After cleaning up faeces or vomit
- ✔ After playing outside
- ✔ After wiping a nose
- ✔ Before going home

NHMRC National Health and Medical Research Council
COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH
Childcare

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NHMRC Recommended Childhood Vaccination Schedule

2 months
Triple antigen (DTP)
Sabin vaccine (OPV)
Hib vaccine (a, b, c)

4 months
Triple antigen (DTP)
Sabin vaccine (OPV)
Hib vaccine (a, b, c)

6 months
Triple antigen (DTP)
Sabin vaccine (OPV)
Hib vaccine (b, c)

12 months
Measles-mumps-rubella (MMR)

18 months
Triple antigen (DTP)

5 years or before beginning school
Triple antigen (DTP)
Sabin vaccine (OPV)

12 months (a) or 18 months (b, c)
Hib vaccine

10–16 years
Measles-mumps-rubella (MMR)

15 years or before leaving school
Adult diphtheria and tetanus (ADT)
Sabin vaccine (OPV)

Footnote: Hib vaccines **a** PRP-OMP (PedvaxHIB) **b** HbOC (HibTITER) **c** PRP-T (Act-HIB)

NHMRC National Health and Medical Research Council

Commonwealth Department of Human Services and Health

Childcare

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Commonwealth Childcare PROGRAM

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